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EDITORIAL

"Twenty Years After," (twenty years after the Publication of Rorschach's Psychodiagnostik), seems an appropriate time for retrospection and for contemplation of the future. In the spring of 1936 a group of fourteen Rorschach enthusiasts invested jointly the sum of \$42.00 to create the mimeographed Rorschach Research Exchange. This capital represented the first year's budget for the publication. After one year the circulation of the Exchange exceeded 100. Three years later the Exchange had developed into the Rorschach Institute which, broadening its interests and functions evolved by 1947 into the Society for Projective Techniques.

Simultaneously with the growth of organization and scope the Society hazarded the next evolutionary stage of changing its publication, renamed the Journal of Projective Techniques, from its tentative mimeographed form into its present printed one, in which ten volumes were printed. The circulation of Volume 20 exceeded for the first time 2000 copies, distributed among members in most of the United States and twenty-one foreign countries and to subscribers in an additional twenty-one countries.

The maturation of the Journal in its twenty years reflects both in format and content the burgeoning of the field of clinical psychology and the increasing utilization of projective methods in a variety of the social sciences as well as in clinical psychology. It is evident that throughout these years a cross-fertilization of the several fields occurred and that fruition is not yet complete. The growth of the Journal we believe has been

not merely a quantitative expansion, but also an expression of significant maturation and differentiation of procedures, values, and knowledge.

In this twenty-first year of publication the Journal is stirring toward further expansion. A year ago we despaired about publication lag and the receipt of each new manuscript was an occasion for concern. At present we have virtually no backlog and hence no publication lag beyond the period of time required for processing manuscripts. A manuscript can now be scheduled for publication in the next issue following its acceptance.

Several trends have converged to produce this most recent state of affairs. Our printer has increased the amount of material which can be printed on a page. Perhaps, too, we are breeding a new genus of clinicians who, knowing what they wish to say and having acquired a sound background in scientific method, write precisely. Their papers have improved in quality to the point where the acceptance rate seems now to be on the increase. The average length of published articles has shrunk from about thirteen pages to seven within four years. During the past ten years the Journal has tripled in the number of original papers. This means that we are using up manuscripts pretty rapidly, more rapidly in fact than we are accepting them.

We are pleased that we are now able to extend an invitation to authors to submit their papers for almost immediate publication.

THE EDITORS

The Projective Question: Further Exploratory Studies¹

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Since the initial presentation of the Projective Question (4), we have further revised the method of administration, refined scoring categories, and completed several exploratory studies which it seems appropriate to report at this time. Also presented are normative data, an illustrative protocol, and a continued discussion of the Projective Question's clinical implications.

INTRODUCTION

It will be recalled from the earlier publication that the Projective Question is a brief, unstructured, verbal item, designed to quickly elicit depth psychological material. The subject is asked what he would *most* like to be (Positive PQ), and what he would *least* like to be (Negative PQ), if he were not a human being. The question is followed by an inquiry, so structured as to specify the general response and the reason or reasons for making a particular choice selection.

As previously noted, neither the term "Projective Question" nor the type of question asked were by any means original. Insofar as we have been able to determine, Levinson (10) first introduced the term in his report on eight questions asked in the studies on the authoritarian personality. Van Krevelen's (14) recent discussion of Pigem's Wishing Test highlights the utility of a very similar

technique in the diagnostic appraisal of children. Still another Wishing Test (*Wünsch Probe*) has been published by Wilde (15).

In addition to the brief items already cited (4), other related techniques have been reported. Gorham's test of proverbs (6) seems practical for clinical exploration and estimating intelligence. Baumgarten (1) offers proverbs for eliciting attitudes in specific areas. In diagnostic and therapeutic interviews Benjamin's proverbs (2) have been found helpful. Zwelling's technique of asking patients to tell their favorite joke (16) has been similarly useful. Perhaps even more depth-probing are Boernstein's Verbal Self-Portrait Test (3) and The Earliest Memory question developed by Saul, Snyder, and Sheppard (13). Lachman (8) has combined a series of twelve such brief items into the Self Explorations Inventory.

REVISED PQ ADMINISTRATION

As indicated in the postscript to the original communication (4), the PQ now consists of two related subquestions, the Positive and Negative PQ; that is, "What would you *most* like to be if you were not a human being?" and "What would you *least* like to be if you were not a human being?" In addition to probing into the reasons for a specific choice (obtaining the theme), the inquiry has been extended to determine what specific form of a more general species a subject may select. Although the questions are generally asked in the order here stated, some subjects may find it easier to reply first to one or the other.

¹ This study was completed while both authors were on the staff of the Lafayette Clinic. Data on student nurses and medical students were obtained at the Western Psychiatric Institute, University of Pittsburgh School of Medicine. We wish to express our appreciation to our cooperating colleagues.

RESPONSE CLASSIFICATION

Choice Categories: Continued experience has shown that the initial list of eight categories is satisfactory for both Positive and Negative PQ. It may be desirable, however, to add a ninth by separating the previous combination of Solid Objects and Abstractions. Also, for the sake of semantics, the term Objects might be replaced by Concepts.

Respondents' choices still tend to cluster in four major categories; that is, Animals (Wild or Domestic); Botanical Concepts; Inanimate Concepts (Powered, Natural, Solid, and Abstractions); and Supernatural or Human Concepts. It has also become increasingly evident that categorization poses problems uniquely its own. There are vast differences within broadly conceived categories, as for example between rodents and lions, both of which are classified as wild animals. This is the old dilemma of having categories literal enough to permit highly reliable scoring and yet sufficiently interpretive to have clinical significance and theoretical implication.

Theme Categories: The initial list of eight themes to describe positive PQ choices appeared to work out satisfactorily. (Independence, The Good Life, Beauty, Liked by People, Useful to People, Similar to People, Safety, and Special Attributes.) Themes for negative PQ choices were also developed by content analysis. It was hardly surprising that they tended to be opposites:

1. Dependence—meaning failure or inability to achieve independence; dependent on others for existence.
2. The Hard Life—meaning life or the environment is difficult, frustrating, unpleasant, too short.
3. Unattractive Attributes — meaning emphasis on such characteristics as ugly, smelly, dirty, repulsive, sneaky, etc.
4. Disliked by People or the Respondent—meaning that the choice is

feared, hated, disliked, held in contempt, etc.

5. Harmful to People or Others—meaning that something is evil, dangerous, destructive.

6. Dissimilar to People—the choice is disliked because it is so different or far removed from human attributes, e.g., no intelligence.

7. No Safety — meaning that the choice object is in danger of losing his life, being killed or eaten, always pursued or threatened, etc.

8. Special Attributes — Unusual properties peculiar to the choice object and not readily classifiable under any other theme category.

Since many subjects frequently give more than one reason for selecting a particular choice, whether positive or negative, classifying responses for theme content is usually more difficult than classification of the actual choice. For research purposes it is therefore important to train raters on how to determine and score the single most important attribute mentioned, or on how a number of reasons cited reflect one particular theme. Once this has been accomplished, inter-rater reliabilities are satisfactorily high.

The additional reasons expressed for selections may be considered in much the same light as additional scores on the Rorschach. However, this feature is probably best dealt with informally in making interpretations rather than complicating the classification procedure.

CONSISTENCY OF POSITIVE PQ RESPONSES

To substantiate the normative data, we decided to follow up the earlier reported Positive PQ indications that "highly homogenous groups have very similar distributions of choice categories." The percentage of subjects from a given population, selecting specific choice categories (e.g., Wild Animals, Domestic Animals, etc.) may be considered as the expect-

tancy that any one subject within the group will give that kind of response. To test this notion, the PQ was administered to groups similar to those on whom results were originally reported. A comparison of normative percentages would indicate the consistency of "most like to be" choice categories.

In addition to the previously reported findings on 300 student nurses, 150 medical students, 50 non-hospitalized neuropsychiatric outpatients, and 50 hospitalized neuropsychiatric inpatients, we classified the PQ responses of 150 student nurses, 50 medical students, 98 outpatients, and 44 inpatients. For statistical purposes, Power, Natural, and Solid Concepts were combined into Inanimate Concepts. Similarly, Supernatural and Human Concepts were pooled. Wild Animals, Domestic Animals, and Botanical Concepts made up three other cells. The number of responses in each of these five choice categories, for the two groups constituting separate samples from each of four populations, served as the basis for computing chi square tests of significance.

Although the figures cited in Table I are percentages, chi square tests were determined on the basis of raw scores. None of the probabilities were statistically significant. (To be significant at the .05 level of confidence with 4 d.f., they would have had to be about double the actual values obtained.) The results tend to confirm the earlier notion that distributions of choice categories reflect an essentially stable variable among four distinct populations. It may well be that personality attributes suggested by a particular choice category, e.g., Independence—Wild Animals, are also reliably reflected at the group level.

Very similar findings were noted in a comparison of Positive PQ theme categories, and we are not therefore presenting a separate table. Themes predominant in one group of sub-

jects were equally predominant in a second group from the same population, whether student nurses, medical students, outpatients, or inpatients.

NEGATIVE PQ EXPLORATORY STUDY

It will be recalled that the original Exploratory Study reported only Positive PQ data. The Negative PQ was individually administered to 40 hospitalized neuropsychiatric inpatients and 45 non-hospitalized neuropsychiatric outpatients, matched for age, race, sex, marital status, education, and socio-economic background. The patients were similar to those originally tested, being seen in a psychiatric training center affiliated with a medical school. The Negative PQ was also group administered to 150 student nurses and 50 medical students, further samples from the same populations tested earlier.

The negative choices and theme categories are shown in percentage form in Tables II and III. It can be readily observed that the hospitalized patients deviate markedly, often refusing to give a reply, being unable or unwilling to shift away from human concepts, or failing to give reasons for choices made. While the Negative PQ tends to elicit predominantly wild animal responses, the popular choices of snakes, rodents, or insects are quite different from the birds and lions of the Positive PQ. It is rather likely that symbolized fears tend to be projected here. Domestic animals are cited only infrequently by student nurses and medical students; more so by outpatients and inpatients. Not wishing to be a dog or other domestic animal may represent some retreat from what is commonly accepted, or perhaps an inability to endure potential gratification of needs. It seems similar to rejecting a popular response on the Rorschach. The remaining choice categories do not reflect any marked differences, except that medical students seem more concerned with

TABLE I. Consistency of the Positive Projective Question when Choice Categories are Compared for Two Different Groups of Similar Subjects

Subjects	Group	N	Wild Animals %	Domestic Animals %	Botanical Concepts %	Inanimate Concepts %	Supernatural and Human Concepts %	X ²	P (4 d.f.)
Nursing.....	1	300	36	42	8	12	2		
Students.....	2	150	29	48	8	10	5	4.3616	.30—.40
Medical.....	1	150	40	43	3	9	5		
Students.....	2	50	54	28	2	12	4	4.2555	.30—.40
Outpatients.....	1	50	42	40	6	6	6		
	2	98	28	40	10	9	13	4.6917	.30—.40
Inpatients.....	1	50	14	20	8	14	42		
	2	44	30	25	2	9	34	5.4333	.20—.30

TABLE II. Negative PQ Choice Categories Among Student Nurses, Medical Students, and Psychiatric Patients

Subjects	N	Wild Animals	Domestic Animals	Botanical Concepts	Power Concepts	Natural Concepts	Solid Concepts	Super- natural concepts	Human Concepts	Refusals
Student Nurses.....	150	73%	14%	4%	1/2%	1/2%	7%	1/2%	1/2%	0%
Medical Students..	50	64%	12%	6%	2%	0%	12%	4%	0%	0%
Outpatients.....	45	71%	18%	0%	0%	0%	2%	7%	2%	0%
Inpatients.....	40	47%	20%	0%	0%	0%	3%	0%	15%	15%

TABLE III. Negative PQ Theme Categories Among Student Nurses, Medical Students, and Psychiatric Patients

Subjects	N	Depen- dence	Hard Life	Unattrac- tive Attributes	Disliked by People	Harmful to People	Dissimilar to People	No Safety	Special Attributes	Refusals
Student Nurses.....	150	3%	19%	25%	25%	6%	1%	15%	6%	0%
Medical Students..	50	4%	40%	8%	14%	10%	2%	14%	8%	0%
Outpatients.....	45	7%	9%	11%	33%	7%	2%	24%	7%	0%
Inpatients.....	40	8%	7%	20%	3%	20%	0%	7%	0%	35%

Solid Concepts, indicating perhaps an effort to intellectualize. Outpatients, far more than others, like Supernatural Concepts, a possible symbol of neurotic anxieties and pre-occupations.

Inspection of the percentage distribution among the Negative PQ theme categories shows several interesting trends. Dependency is only rarely offered as a reason for a choice, but about twice as often by outpatients (7%) and inpatients (8%) than by medical students (4%) and student nurses (3%). More medical students (40%) reject the notion of a hard life than anything else, a theme cited by 19% of the nursing students and by less than 10% of either outpatients or inpatients. (No comment). Unattractive Attributes concern about 25% of the nurses and 20% of the inpatients, tending to reflect some preoccupation with how one is viewed by others. Another 25% of the nurses seem to worry about being disliked, a thought mentioned by 33% of the outpatients but by only 3% of the inpatients (who may have resolved the question). Instead, 20% of the inpatients talk of the dangers of being harmful, reflecting perhaps the problems of how to deal with their inner aggression. While both medical students (15%) and student nurses (14%) are somewhat concerned with safety, this is the second most frequently stated outpatient theme (24%), possibly showing their often acute anxieties and fears. It becomes readily apparent that themes are even more important than choices in attempting to comprehend the dynamic implications of a PQ response.

AN INDIVIDUAL CASE PROTOCOL

Since the explorative studies have been so concerned with classificatory and normative aspects, it may be desirable to present an individual PQ protocol. The respondent is a 26-year-old, married, female outpatient referred with a psychophysiological

gastro-intestinal reaction. To facilitate therapeutic planning, psychological evaluation was requested and a complete battery of tests was administered. The Positive PQ follows:

"Something that's got a nice long life. . . Not an animal . . . they're dumb, not reasoning beings. . . Plant life is short-lived, beautiful. . . I suppose something inanimate . . . *Mt. Rushmore*, . . . but that's man-built. . . I imagine that's going to endure for awhile. . . Little by little it slips away each year. . . A stone would be all right too . . . no delusions of grandeur. . . I wouldn't want to change places with animal or plant life unless I could be another person. . . In kidding discussion I've said I'd like to be a male but I think I'd like to be a female. . . There's nothing great to being a male . . . being a male means responsibility, men don't have much choice."

The Negative PQ: "Some form of plant life—specifically a *flower*. . . Their moment is so brief but there are some perennials. . . I wouldn't like to be a tree in a climate like Detroit. . . I wouldn't want to be alone and unprotected. . . Some are majestic and grand to look at. . . In a real depressed mood, I think I'd pick on a *weeping willow tree*—dejected, casting-down-of-hands sort of look."

It is readily apparent that the patient has given a great deal of projective material with pointed clinical implications, e.g., her attitudes and feelings relative to survival, responsibility, sexual identification, depression, physical display and attractiveness, grandiosity, intellectual values, etc. The other projective data yielded more elaboration of these themes but little additional new material. Of course, we purposely selected an unusually rich PQ protocol, showing what might be elicited under ideal conditions. Briefer PQ responses have frequently been just as helpful in focusing on major conflicts and defenses. In that sense the PQ can stand on its own as well as contribute to the consistency and completeness of the skillful interpretation of a test battery. A number of psychiatrists now incorporate the PQ in their routine questioning. In our discussions of their findings, we try to em-

phasize that the seeming simplicity and brevity of the PQ does not necessarily restrict the clinician to a specific symbolic interpretation or to narrowly applied notions of the patient's expressed identification.

DISCUSSION

Perusal of current literature on projective techniques reflects some dissatisfaction with the relatively uneconomic, time-consuming traditional procedures of evaluation. Kass (7) wonders "about the sheer economics of hours put into testing, recording, reviewing, pondering, interpreting results, and reporting conclusions . . . the worthwhileness of such heavy time investment if the most that can be said of a test's contribution is that its results correlate significantly with findings from direct sources."

As the demands of clinical practice continue to expand, briefer techniques are likely to receive increasing attention. While not designed to replace more intensive projective methods, they do offer important and at times dramatic insights to time-harassed clinicians. PQ material is seldom shallow or inconsequential. Although close to conscious cognitive and conative levels of ego functioning, it often affords the patient an opportunity to express something he is unable to state directly. Where rapid clinical appraisals are needed, PQ responses may orient the direction of further inquiry. In this sense they are not very different from Rorschach content interpretation; yet, they provide an opportunity for association to content without the necessity of considering perceptual elements.

A criticism of note is one raised by Feifel (5) against most hypothetical situation techniques (a term proposed by Lehner (9) for brief questions of the "If you had . . ." variety). Feifel commented that "the hypothetical situation technique reflects cultural and conventional stereotypes more than it does personal and idio-

syncratic outlook." This is certainly true in some instances; more frequently in group than in individual PQ administration. What is important, however, is to establish, as Feifel suggests, group reference points or baselines from which the clinician can assess individual responses and deviations. While some patients require more "inquiry" than others, we have usually found important themes reflecting deeply personal meanings for what may have appeared at first a highly conventional choice.

Another method of using PQ material may be to ask the patient to interpret his own responses. This technique, suggested by Luborsky (11) for the TAT, seems particularly appropriate in therapy. To the extent that individual meanings are related to a person's coping and defensive responsiveness to life situations, the PQ is a valuable clinical adjunct.

While we do not have a great deal of evidence, there are some indications that in normal subjects Positive PQ choices tend to reflect a more rational intellectual reasoning process, whereas responses to the Negative PQ appear frequently less rational and more emotional in content, as if the subject were suddenly given an opportunity to vent a pent-up feeling. This might well be further explored. It also seems as if passive, introverted subjects give more impersonal themes, such as "people like" or "people dislike" the given choice. Outgoing, assertive persons more readily identify themes as immediately felt reasons for liking or disliking a PQ response.

Although we consider the PQ as primarily an individual projective technique, for some purposes it may be desirable to offer the subject alternative concepts in multiple choice fashion, e.g., dog, flower, snake; cat, storm, angel; car, mountain, monkey; amoeba, star, elephant, etc. Eventually a scoring key might be devised

similar to those used with related questionnaires.

SUMMARY

The Projective Question is a brief, unstructured, verbal item, designed to apply the general principles of projective techniques to the study of personality. This paper is a continuation of an earlier one (4). It presents more extensive methods of administration and classifying choice and theme categories. Also reported are further normative and exploratory studies, an illustrative PQ protocol, and a continued discussion of implications for clinical evaluation and personality dynamics.

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A Rorschach Interview Technique: Clinical Validation of the Examiner's Hypotheses¹

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As the interest in content analysis of the Rorschach has grown, there have been many efforts to arrive at consistent theoretical or empirical frameworks for the interpretation of content (1, 3, 4). Correspondingly, there have been efforts to "validate" content by asking the subjects to give more ideational data in relation to his percept. For example, subjects might be asked to free associate to their own response (2) or to take a word association test² in which their percepts are included². More simply, subjects are commonly asked, "What does a ——— mean to you?" These are useful techniques but they have one common failing. They do not really validate the examiner's interpretations. They serve only to give more associational material, and material that is largely on the same psychic level as the original response. The method proposed here does not aim at further associational data nor does it aim at validation of the content *per se*. It aims, instead, at testing the *examiner's hypotheses* about the meaning of the responses.

THE INTERVIEW TECHNIQUE

After the Rorschach is given in the standard manner—both performance proper and inquiry — an interval is needed before the patient is seen for a second session. During this interval the examiner carefully reviews the re-

sponses and creates hypotheses about the dynamic well-springs of each percept. These hypotheses are then converted into questions that may be asked, quite directly, of the patient.

The Construction of Questions

In constructing questions the examiner must approach each percept with the totality of his personal and professional experience and knowledge. It has been found helpful for the examiner to "put himself into the percept," at times actually assuming a position described in a response so that he may feel all the kinesthetic and proprioceptive cues that may have prompted the percept. His unconscious processes may be given full reign because his hunches will be checked before they enter a consultation report.

Some responses prompt many questions. Here it has been found advisable to limit oneself to two or three because similar questions will arise from other percepts. Questions may be on many levels — feelings, fantasies, impulses, history, or usual patterns of behavior. Above all, the question decided on should be the examiner's reaction to the percept *as given by that particular patient*.

At times questions may be constructed not on the basis of content, but other reactions of the patient to the card such as unusual reaction times, card turning, facial expressions, remarks and manner of description. When a patient's initial reaction to the last three cards was color naming he was asked, "Do your emotions sometimes get the best of you?" and he replied, "Yea, they override my reasoning power and push me very hard. Normally I use

¹ This is a technique developed by the author at the Bronx VA Hospital, largely in his work with locked ward psychiatric patients. It has also been used with open ward patients and with neurological patients. Thanks are due to Leone N. Lesser, of the Bronx VA Hospital for her help in developing this procedure and to Dr. Zygmunt Piotrowski for his approval and encouragement.

² Unpublished method by Jack Wanger of the Bronx VA Hospital.

reasoning but after awhile I don't give a damn any more. I smash things apart, etc." Another patient could not decide which way the woman he saw in the center of Card I was facing. He was asked, "Do women sometimes confuse you?" and he replied, "Uh-huh, all the time. Gee whizz! I can't figure them out—what they want or expect. I can't tell if they're lying or telling the truth, etc."

The final consideration in question construction is its wording in the most easily acceptable form. This does not mean that an issue raised by a percept should be ducked if it taps potentially upsetting areas. It means only that the issue should not be approached too bluntly or harshly. For example, a patient gave a response indicating grandiose ideas. The question asked was, "Do you have secret thoughts of wanting to be in the spotlight?" He replied, "No. Well, yes. I used to think of myself as, well the Messiah. I'd bring salvation to the world." A more frontal questioning of his grandiosity may have brought denial.

It is usually best to make the first and last questions as non-anxiety arousing as possible.

Instructions to the Patient

When the patient is seen for a second session the questions are presented to him in a highly structured manner. The interview is introduced approximately like this: "I am going to be asking you some questions of a rather personal nature. It is very important that you cooperate by answering them as frankly and as honestly as you can. At times, I may cut your response short. This is because I know there will be another question about it later. Are you ready?" Cooperation is usually excellent.

CASE ILLUSTRATIONS

To demonstrate this method, the protocols of two cases are given. Only

the first five cards are presented here as that is felt to be sufficient to illustrate the technique. The cases are both psychiatric patients. They are selected because they differ in education, intelligence, color, occupation and psychiatric diagnosis.

Case A

45 year old white married male with a provisional diagnosis of character disorder with drug addiction. Prep school graduate. Editor of a small weekly newspaper. Full Scale IQ 121.

I. 1. 13" An odd sort of jack-o-lantern

Q. "Do you feel you fool people and give them the wrong impression of yourself?"

A. Occasionally, I do—sometimes I give them the impression I'm a good deal smarter than I am. I'm glib—even here fellows think I know something on a good number of subjects. I really don't know that much. (?) It does make me feel phoney, deceptive. As a matter of fact, it gives me feelings of guilt.

Q. Do you feel empty?

A. Quite frequently I feel empty. I wonder how I held jobs of considerable responsibility without the background. Like I was a professional musician, who did pretty well, without formal training.

2. 2 youngsters in a dancing position.

Q. Did you have an active childhood?

A. Fairly active—I played ball and liked to box and played some football. But I was never husky enough or aggressive enough.

3. A caricature of 2 small birds waiting—or perhaps already being fed by the mother bird.

Q. What type of woman was your mother?

A. That's hard to describe. She always insisted we would be well trained. She wanted us to be performing animals before any guests that came. She was not cruel but unknowingly she could be cruel to her children. In this she was as innocent of cruelty as anyone could be. She had tremendous vitality and determination.

Q. Did she give love and affection

easily?

- A. That's hard. I'm sure she loved her children and yet was restrained in a sense that I can't quite describe. For example, my being here — she seems very sympathetic on the phone and yet I feel she does it out of fear that I'll never snap out of this and she's trying to encourage me. She's afraid that at my age I'll never get back on my feet. I hope I haven't given you the wrong impression about her.

II. (He was about to say something, then turned the card.) 1. 23" A man crouched, as though looking over a cliff.

Q. Are you concerned about the future? How?

- A. I'm concerned but inwardly I have the feeling that I'll succeed and overcome the problem by some means, in some way. I worry most about pressing things like bills and other finances. But I'm sure I'll land a job, etc.

Q. Have you ever thought of suicide?

- A. I don't think I've thought of suicide more than the average person does. I stopped drinking because I had a fierce desire to live and make my life prevail.

2. As though I were looking down from a plane, and saw part of a bomb bursting.

Q. Do you have a temper? How do you control it?

- A. If I do have a temper I never manifest it outwardly. I can be very angry at a person and not show it to them. Later on, I seem to absorb it all myself. As though my whole being absorbs the anger like a sponge. I turn all the anger against myself.

3. Two clowns. They seem to be coming together, as though in a mock fight. And they have simultaneously struck their knees together.

Q. How did your parents get along?

- A. Wonderfully well. Of all people I know, I never knew two people as devoted as they were and are. You are aware instantly that they love each other very much. All my life I've known that.

Q. Do you have any siblings?

- A. An older and a younger brother. Initially there were 2 sisters but they died. My oldest sister's death

was a great tragedy. We were all very fond of her. She was wonderful, brilliant.

Q. How did you get along with your brothers?

- A. With my older brother I didn't get along as well as with the others. When he was young he had polio. A good deal of money was spent on him. When he began to recover, he lived as a privileged character and took a great deal of advantage of it. There were some open conflicts but never a serious breach. He would play my younger brother against me and *vice versa*. He is a little bit of a bully but most of it is all forgotten.

4. A caricature of a french poodle wearing a red cap.

Q. Did your parents show you off and expect you to achieve a lot?

- A. Yes to both. She wanted us well trained and drilled. That's why she sent us to military school.

III. 1. 5" — 2 neighbors disputing — perhaps over who owns the lawn mower or some garden implement.

Q. What were the main conflicts in your family?

- A. There were never open and obvious conflicts. If there were any, they were subtle. We all seemed to live in harmony. There were subtle undercurrents—it might be most between my mother and me. I could never clearly evaluate the relationship between us. At times I hated her, at other times there was a great deal of tenderness and pity for her. She could do things that were extremely exasperating. She had little mannerisms that I think she even knew exasperated me. She was a social snob, prejudiced, narrow in her views of other people.

2. Now I see 2 colored children — they appear to be in a dance, back to back. Their hands are raised and there is some colored balloon or toy that they tossed in the air.

Q. Are you concerned about any sex problems? Do you feel guilty about any childhood experiences?

- A. No. When I was younger—I probably was no different than any young fellow without experience—I might have been troubled by it

and had a feeling of guilt about the fact that I masturbated. I never really had a satisfactory sex life until I was married at 38. My wife and I are very compatible in that way and in almost all ways.

- IV. 1. 8" — A Chinese dragon — it might be used in a float like on the Chinese 4th of July or whatever they celebrate.

Q. What was your father like? Was he a distant man?

A. I've always been very fond of him — he had a wonderful disposition. He would get up early and sing while shaving. As a child I remember him as extremely well dressed. He generated a feeling of well being and a great sense of security. He has always been very good to me and tried to be understanding. He's a very good provider and has a wonderful sense of humor.

2. The vagina of a woman — where the vaginal opening is I should say. (He looked tense, reddened slightly.)

Q. Do you have any present sexual concerns?

A. I think I've already answered that.

3. Some kind of a bird with enormous wing spread, although the wings are pulled together like it's about to make a heavy stroke in the air, to be propelled forward. A giant bat.

Q. Are you ambitious?

A. Secretly I probably have a good deal of ambition and anticipate a good deal more than I will probably ever get out of life.

Q. Do you put a lot of energy into success?

A. Yes, in all the jobs I had I drive myself too hard. That's probably why I'm not more of a success than I could have been. I get bogged down in detail instead of being a good administrator—delegate work and maintain cooperation.

Q. Do you like to win over others?

A. Yes. That's a trick question. I want to win and yet when I do, I probably appear like a damn fool trying to put on a phoney act of complete modesty. Yet I want the feeling of having won out. To me success is being able to do one or many things better than anyone else could do it. I wasn't the

best in music so I couldn't have a feeling of great fulfillment.

4. A shoreline reflection of a tree that's been doubled over by the wind. It's sort of a quiet cove. It looks like it has never been inhabited by any man.

Q. Do you ever hope to get away from it all and be yourself?

A. I've entertained quite often the wish that my wife, little girl and I could go live in a very quiet community, a small town, where I could own and run my own newspaper and be known and liked by everybody. I wouldn't be subject to the pressures of my work in a metropolitan area.

Q. Are you troubled by feelings of loneliness?

A. Not since I've been married. Until then I was extremely lonely and thought I would be all my life. I suppose I'm no different from any other person in the feeling there is some secret island in myself that no one could reach or inhabit. I had that feeling even after I was married — a secret inviolable part that even my wife could never know. But it's gone away, gradually diminished. My wife has gotten to know me better than I understand myself—and still she hasn't lost her belief in me.

- V. 1. 12" Looks like an animal's antenna.

Q. Are you sensitive to criticism and what others think?

A. Yes—I'm concerned what other people think. That's why I'm upset about this exam, which is a simple thing and will be very revealing to those who study the results and I'm anxious to have all people think well of me. I can take criticism well but I would prefer it to be praise.

2. A ram's head.

Q. Do you often get into clashes with others?

A. Rarely. Never an open clash. The only thing I had which you could call a clash was last year when I had some difficulty about someone at work, etc. Whenever I have a clash, the after effects are too devastating. It disturbs me—you make a fool of yourself and it means you haven't been able to handle a situation well.

3. A woman with her knees sort of knocked together. As though swinging either 2 partners on either side of her—or she has heavy veils of some kind.

Q. Was your mother controlling? Domineering? Manipulating?

A. Yes. (Long pause.) She's very deceiving. If you meet her for the first time she seems like a gentle, sweet, delicate old lady. But even today she has an indomitable spirit. She epitomizes being subtly domineering. The iron fist in the velvet glove.

Q. Do you feel that you can do some difficult things very well?

A. I can't think of any off hand. No. But then few people could do the work alone that I have done for many years.

4. The top portion of a skull. Only the top—nothing else (used white space).

Q. Do you rely a lot on thinking things out rationally in order to control your impulses?

A. In some ways, yes. In others, if I had done rational thinking I wouldn't be here. I try to approach a good many problems at work—where important decisions must be made—by logic. But anything closely connected to my personal self, I haven't been rational. When a psychiatrist prescribed drugs I should have known that since I had once been an alcoholic I could never use anything as a crutch.

5. A discarded toupee (laughed).

Q. Are you concerned about getting older? Losing abilities? Losing virility?

A. Yes—any fellow my age would. Particularly in the position I'm in—there is an age limit to hiring people. I feel I still have the abilities. As far as sex goes, there is a good deal of difference between 20 and 45 but no, I'm not as yet concerned.

6. A dog, either sitting up begging or learning a trick.

Q. What was the best way to get your mother's attention?

A. (Laughed.) Some question! (Long pause.) I can't recall. You mean at 5 or 6? I usually went directly to her and asked for something if I wanted something. It would most

please her when I was obedient and did what she wanted and displayed good manners. I can't recall that I ever cried or had a tantrum. That just wouldn't work with her.

Case B

28 year old Negro married male with a provisional psychiatric diagnosis of anxiety reaction. 11th grade education in South Carolina. Laborer. Full Scale I.Q. 93.

- I. 1. 1" A bat. He got his back toward me. Just standing with his wings spread. The bottom of his wings could be torn parts of the bat.

Q. Do you sometimes wish you were more active?

A. I sometimes wish I was more bold and frank. I wish I could come out and tell a person what I think of them. And be quick to meet people. I am shy, with women especially.

2. Looks like a map, too. The wings look like maps and islands.

Q. Do you often hide your real feelings from people?

A. Yeah. (?) With men, I don't hide nothing. But with women, the female sex, I hide my feeling entirely. Sometimes they do things to me I don't like—I usually don't say anything about it. Q. Like with my wife, she does things wrong and I don't say anything about it until I blow up.

3. Looks like a bug. (?) A beetle bug, getting ready to get something to eat—mouth open and claws open.

Q. Was your mother a person who tried hard to control you?

A. She had no trouble with me on that. (?) I was always glad to do something for my mother. But my father—he held the upper hand there. He made you do things for him. But my mother never had a lot to say—she worked hard.

4. Some islands.

Q. Do you ever feel very lonely?

A. Uh-huh. I just feel like I want to talk to somebody—somebody I like real good and love real good. It's been my biggest problem for years. Like now, I'm separated from my wife—I want to see her but she recommended I leave and I'm too

bull-headed to write her. So it leaves an empty space.

- II. 1. 20" Oh, looks like 2 chinchillas. (?) Their feet are tied together—I wonder why they're tied together? Just like me in my mind. I am tied together with something but I don't want to face it. Subconscious-like. Like there is something I just got to do. There's always a load, something heavy, something I can't do alone. I always set large goals but I never make it and I lose interest. These things are tied together. They're trying to get somewhere but one is holding the other one back. I believe these chinchillas want to eat these feet or sox but they are tied together to keep them from getting it, one is trying to beat the other.

Q. Do you ever feel very angry deep inside of you? How do you show it?

A. Uh-huh. I feel like I want to tear up something. At home I would—then I'd feel OK. It is letting off steam. I'd tear off doors, windows—every week. But I was OK. It was worth it.

Q. Do you ever get very depressed?

A. Yeah, I feel like everybody's down on me, that there is nobody giving me a hand. I don't mean with my bills. When I need someone to lean on, to praise me, there is no one and I'll feel repressed and downhearted.

Q. Did you have brothers and sisters? How did you get along?

A. There were 9 in the family. I'm the third. We got along OK. Me and my older brother were rough. We used to like to fight. People were always picking on me. I fought a lot with my older brother, about different things—he'd get my things or put work off on me. (It must have been tough getting attention in such a big family?) I know—my parents didn't have time for that. My father had time but he didn't take the time. My mother just didn't have the time.

III. 1. 5" A butterfly.

2. Looks like 2 stomachs.

Q. Do you worry much about your health?

A. Physically, I'm OK. I never get sick.

3. Weird looking things—I don't know.

Q. They're weird looking—with clawed feet. They look like something I've seen in a weird book. Something out of this world. And they're holding 2 kidneys over the front part of a skeleton.

Q. Are you sometimes afraid of being with people socially?

A. Yeah, I just feel I'm not wanted. It feels like you're in the wrong world.

IV. 1. 30" 2 horns. Q. Ram's horns.

2. Two feet, and 2 eyes and a head and 2 ears—and tusks—and horns on the head. These things are impossible. People just can't sit down and figure out these things. That's all I can see except monstrosities. (?) Some giant—a weird, hairy giant. I'll bet these are just regular, everyday pictures. Not real inkblots. It would have to be a weird person to draw something like this. These things just don't happen. Somebody in worse shape than I am had to make these. Only me and the man who made them can figure this out.

Q. Do you feel people are often out to trick you?

A. No—I never had that feeling.

Q. Do you often feel you're different from most people?

A. When I was a kid I used to feel that way and I guess a part of it still sticks with me. In school I'd study a lot. But my parents never told me I was as good as the next person because of the way I talked. And other people had better clothes than me. Today I stay in the middle class bracket. They never said that the way I talked or did made any difference so I felt I was the underdog.

Q. Were you afraid of your father?

A. Uh-huh. I can remember I was wearing diapers and wetting on myself when I was 3 years old. He took me and beat me until I couldn't ever holler. After that, whenever I saw him I'd start shaking, till I was 11 or 12 years old. There were always beatings, not spankings. It was with a leather strap. It seems like I was the only one who got the beatings like that.

V. 1. 20" A bat — tails and ears. (?) Not flying — standing with wings spread.

2. 2 legs and 2 tails — something like a lamb, or a lion.

Q. Do you ever get confused about whether you should act angry or easy-going?

A. Uh-huh. Like with my wife I used to say, should I say something or let it go. Most of the time I'd let it go. The same with the kids and my mother-in-law.

Q. Do you ever feel that if you are easy-going people will take advantage of you?

A. They do take advantage of me, I've been trying to stop being easy but I can't. It's just my nature.

DISCUSSION

This method, although preliminary, seems to offer a simple, face value attempt at checking what the psychologist feels his subject is communicating. Some have objected that the questions asked are general questions that may be asked with profit of any patient. This criticism has validity — as Sullivan says, "people are more simply human than otherwise" so that hypotheses entertained about them have a large common base. But in a large number of Rorschach Interviews, we find that questions do differ widely from patient to patient. In addition, there are two types of impressive evidence that the questions do hit at a deep and meaningful level of the patient's psyche. First we note that the patient, unmindful of how the questions were created, will at times answer using a metaphor similar to the percept. Note, e.g. in Case A, Card IV, response 4. The patient saw "... sort of a quiet cove. It looks like it's never been inhabited by any man." When on the following day he was asked, "Are you troubled by feelings of loneliness?" he replied, "I suppose I'm no different from any other person in the feeling that there is a secret island in myself that no one would ever reach or inhabit."

In case B, Card III, response 3, the patient saw "weird looking things . . . Something out of this world." The next day he was asked, "Are you sometimes afraid of being with people socially?" and he replied, "Yeah, I just feel I'm not wanted. It feels like you're in the wrong world." There have been several such instances.

The second indication that the questions are not general but highly personal lies in the reaction of most patients to the questions. After the interview is terminated there are frequently exclamations such as "Wow! Where did you get these questions?" "This is terrific — nobody ever asked me questions like that before." Often patients want to continue talking and it has been found necessary to sit with them for awhile to reduce their stimulated state. There have been no poor after effects — in fact one psychiatrist reported that the interview opened up new areas for the patient in psychotherapy.

Another advantage to the technique is that it enables the psychologist to better place the level of a response. At times, in a Rorschach filled with aggressive percepts, it is difficult to know if the aggression is on an impulse and ideation level or if it reaches explosive behavioral expression. Asking such patients about his temper and how he handles it often gives a good picture of the relation of his feelings to his characteristic ways of dealing with them.

Finally, it should be noted that the method described here may have value, not only clinically, but as a research tool in the meaning of projected percepts and as a new way of learning content analysis.

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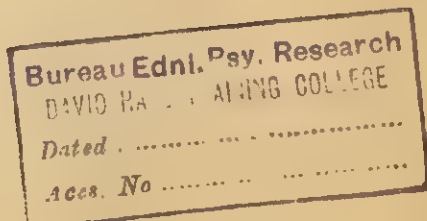
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The Adjustment of the Male Overt Homosexual

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Current psychiatric and psychological opinion about the adjustment of the homosexual may be illustrated by a quotation from a report on homosexuality recently issued by the Group for the Advancement of Psychiatry (1, p. 2): "When such homosexual behavior persists in an adult, it is then a symptom of a severe emotional disorder." If one wishes to subject this opinion to experimental investigation, one is immediately confronted by problems of considerable magnitude. One problem is the attitude and theoretical position of the clinician who may be asked to examine the data. I quote again from the Group for the Advancement of Psychiatry in the

same report (1, p. 4): "It is well known that many people, including physicians, react in an exaggerated way to sexual deviations and particularly to homosexuality with disgust, anger, and hostility. Such feelings often arise from the individual's own conflict centering about his unconscious homosexual impulses. These attitudes may interfere with an intelligent and objective handling of the problem." One hopes that the clinician does not react with "disgust, anger, and hostility." It is not realistic to hope that he will avoid theoretical preconceptions when looking at psychological material which he knows was obtained from a homosexual.

From a survey of the literature it seemed highly probable that few clinicians have ever had the opportunity to examine homosexual subjects who neither came for psychological help nor were found in mental hospitals, disciplinary barracks in the Armed Services, or in prison populations. It therefore seemed important, when I set out to investigate the adjustment of the homosexual, to obtain a sample of overt homosexuals who did not come from these sources; that is, who had a chance of being individuals who, on the surface at least, seemed to have an average adjustment, provided that (for the purpose of the investigation) homosexuality is not considered to be a symptom of maladjustment. It also seemed important to obtain a comparable control group of heterosexuals. This group would not only provide a standard of comparison but might also make it possible to avoid labels and thus assist the clinician in suspending theoretical preconceptions. This, I recognized, would be fraught with extreme difficulties. And so it was. Without re-

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Editorial Note: It is an uncommon event in these days of compulsive publication to discover an author who has worked diligently and with great detail and who hesitates to publish well-substantiated findings until proof is virtually incontrovertible. A study such as Dr. Hooker's challenges several widespread and emotional convictions. In view of the importance of her findings it seemed desirable to the editors that they be made public, even in their preliminary form. If some of Dr. Hooker's comments, as cautiously presented as they are, seem premature or incompletely documented, the blame must fall on the editors who exercised considerable pressure on her to publish now.—BRF

lating in detail the — in many ways — fascinating, frustrating, and gratifying aspects of the attempts to secure both of these groups, I shall describe the homosexual and heterosexual samples of thirty individuals each finally obtained.

Each homosexual man is matched for age, education, and IQ with a heterosexual man. It would have been desirable to match for other variables, also, including occupation, but this was manifestly impossible. It should also be stated at the outset that no assumptions are made about the random selection of either group. No one knows what a random sample of the homosexual population would be like; and even if one knew, it would be extremely difficult, if not impossible, to obtain one. The project would not have been possible without the invaluable assistance of the Matchachine Society, an organization which

has as its stated purpose the development of a homosexual ethic in order to better integrate the homosexual into society. The members of the Matchachine Society not only made themselves available as subjects but also persuaded their friends to become subjects. Because the heterosexuals were, for the most part, obtained from community organizations which must remain anonymous, I cannot describe further the way in which they were obtained.

Considerable effort was devoted to securing the 30 matched pairs of subjects, and the data in Table I indicate that in most instances the matching was unusually close.

The homosexuals, and thus the heterosexuals, ranged in age from 25 to 50, with an average age of 34.5 for the homosexual group and 36.6 for the heterosexual group. The IQ range, as measured by the Otis Self-Adminis-

TABLE I

Matched Pairs Number	Homosexual			Heterosexual		
	Age	IQ	Education	Age	IQ	Education
1.....	42	105	12	41	105	12
2.....	29	104	12	28	104	12
3.....	29	109	9	31	109	12
4.....	31	120	16	30	123	16
5.....	44	127	18	45	126	17
6.....	33	127	16	32	129	16
7.....	40	124	16	42	123	16
8.....	33	124	16	36	122	16
9.....	40	98	12	42	100	12
10.....	33	101	14	32	105	15
11.....	30	127	14	29	127	16
12.....	42	91	12	39	94	14
13.....	44	98	9	44	100	12
14.....	36	114	16	36	117	16
15.....	33	120	14	34	120	16
16.....	40	106	12	44	107	12
17.....	37	116	12	34	113	14
18.....	36	127	16	36	127	16
19.....	35	103	12	37	101	11
20.....	26	133	18	27	133	18
21.....	33	124	13	36	122	16
22.....	32	123	12	39	120	12
23.....	26	123	16	29	133	16
24.....	26	123	16	29	133	16
25.....	41	135	16	39	119	16
26.....	28	114	16	35	112	13
27.....	27	118	13	48	119	13
28.....	27	110	14	48	113	16
29.....	57	95	14	46	100	12
30.....	26	124	14	30	129	12

tering Tests of Mental Ability, was from 90 to 135, with an average for the homosexual group of 115.4 and for the heterosexual group of 116.2. In education the range was from completion of grammar school to the equivalent of a master's degree, with an average for the homosexual group of 13.9 years and for the heterosexual group of 14.3.

In both groups subjects were eliminated who were in therapy at the time. If, in the preliminary screening, evidence of considerable disturbance appeared, the individual was eliminated (5 heterosexuals; 5 homosexuals). I attempted to secure homosexuals who would be pure for homosexuality; that is, without heterosexual experience. With three exceptions this is so. These three subjects had not had more than three heterosexual experiences, and they identified themselves as homosexual in their patterns of desire and behavior. The heterosexual group is exclusively heterosexual beyond the adolescent period, with three exceptions; these three had had a single homosexual experience each. In the effort to control the presence of homosexuality, latent or otherwise, in the heterosexual group, each potential subject was referred by a responsible leader of a community group, who described him as being a thorough-going heterosexual and well adjusted. This was an attempt to take precautions to eliminate as many men as possible with homosexual patterns of behavior. It did not do so, and some individuals came who had to be eliminated because, though married and functioning in the community as married men, they had had extensive homosexual experience (four subjects).

The heterosexual subjects came because they were told that this was an opportunity to contribute to our understanding of the way in which the average individual in the community functions, since we had little data on normal men. They were told nothing

beforehand about the homosexual aspects of the project. When an individual came to me, after describing to him the nature of the testing and the interview and securing his willingness to participate in the project, I then described very briefly the purpose of the study, including the homosexual group. It was impossible to avoid this explanation. The community leaders who referred these men were concerned about possible repercussions of a "sex study". They required that each man be informed that the total project involved a comparison of homosexual and heterosexual men. I had, therefore, to risk the effect of this information upon my subjects. So, having very briefly described the project to him, I then asked whether he had had any homosexual inclinations or experience. This question was put in a matter-of-fact way and only after a good relationship of cooperation had been established. If the individual seemed to be severely disturbed by the question, or responded in a bland way, or denied it vehemently, I did not include him in the sample of 30. It is possible, though I doubt it, that there are some heterosexuals in my group who have strong latent or concealed overt homosexuality.

The materials used for the comparative study of personality structure and adjustment of these two groups of men consisted of a battery of projective techniques, attitude scales, and intensive life history interviews. The material I am reporting on here is largely from an analysis of the Rorschach, TAT, and MAPS, with some references to life histories, the detailed analysis of which has not yet been completed.

I used the Rorschach because many clinicians believe it to be the best method of assessing total personality structure and, also, because it is one of the test instruments currently used for the diagnosis of homosexuality. The 60 Rorschach protocols were

scored by me, the usual tabulations made, and the profiles constructed. With all identifying information except age eliminated, they were then arranged in random order. Two clinicians, who are also experts in Rorschach, analyzed each of the 60 protocols separately in this order. Because of the importance of knowing how, by what process, using what evidence in the Rorschach, a judge arrived at his rating or judgment in each of the categories, each judge was urged to describe as much as he could of the procedure he was using, the conclusions arrived at, and the evidence used; and the whole process was recorded by Audograph. Let it be said here that the task which the judges were asked to perform, that of analyzing 60 records in succession and of verbalizing the whole process, was a monumental one. It demanded not only a devotion to science "beyond the call of duty" but also an admirable willingness to expose one's fallibility. My success in persuading Dr. Klopfer and Dr. Mortimer Meyer, for the Rorschach, and Dr. Shneidman, for the TAT and MAPS, to give so generously of themselves in this project was primarily due to their belief in its importance and to their eagerness to see a unique body of material and to engage in what they anticipated to be a rewarding learning experience.

The purpose of the Rorschach analysis was two-fold: (1) to obtain an unbiased judgment (that is, without knowledge of homosexual or heterosexual identification of subjects and without life-history materials) of personality structure and overall adjustment of the subjects in both groups; (2) to determine the accuracy with which expert clinicians who are Rorschach workers can differentiate homosexual from heterosexual records. Each judge was asked, in addition to the overall adjustment rating, to analyze the Rorschach protocol in terms of a number of categories, such

as methods of handling aggression, affection and dependency needs, methods of impulse control, and clinical label, if any. These judgment categories were used because of their theoretical importance in current approaches to homosexuality. The adjustment rating was on a five-point scale: from 1, superior, to 5, maladjusted; with 3 representing average adjustment. The norm which the judges used was, of course, a subjective one, of average adjustment in the population at large, not just in this group. Assigning an adjustment rating to a Rorschach protocol is difficult, as all of us know. The meanings of the five points of the rating scale were defined as follows: (1) superior, or top adjustment; better than the average person in the total population; evidence of superior integration of capacities, both intellectual and emotional; ease and comfort in relation to the self and in functioning effectively in relation to the social environment; (3) as well-adjusted as the average person in the total population; nothing conspicuously good or bad; (5) bottom limit of normal group and/or maladjusted, with signs of pathology. Ratings 2 and 4 are self-evident, 2 being better-than-average but not quite superior, and 4 being worse-than-average, or the bottom limit of the average group. These ratings are very difficult to objectify, and it is very difficult to be sure that they were used in the same way by the two judges.

One further comment about procedure, before discussing the results of the judging on adjustment: each judge, before he began, knew that some records were homosexual and some were heterosexual. Most clinicians in the Los Angeles area are familiar with the project, and it would have been impossible to secure experts without some knowledge of it. The judge was told that the opportunity to distinguish homosexual from heterosexual records would

TABLE II—Ratings on Overall Adjustment—Rorschach

Group	Ratings				
	(Top)				(Bottom)
	1	2	3	4	5
Judge "A" Homosexual.....	9	9	4	3	5
Heterosexual.....	6	12	5	3	4
Total.....	15	21	9	6	9
Judge "B" Homosexual.....	2	15	5	4	4
Heterosexual.....	2	8	9	8	3
Total.....	4	23	14	12	7

come later and that the present task was that of telling me as much as he could about what he thought the subject to be like in personality structure and adjustment. If anything impressed him about the pattern of sexual adjustment, he should say it, but this was not the primary purpose of this stage of the analysis. The task of the judges was broken down into two steps: (1) The protocols were analyzed, with overall adjustment ratings given and summary judgments made, in the categories already described; and (2) each judge was then presented with 30 pairs of protocols, matched for age, education, and IQ, the task being to distinguish the homosexual record in each pair.

The results of the judging of adjustment from the Rorschach protocols are presented in Table II.

It will be noted that *there are no significant differences between the number of homosexuals and heterosexuals having a rating of 3 and better for each judge; two-thirds of each group are assigned an adjustment rating of 3 or better.* There are apparent differences between judges. For Judge "B" there is a greater unwillingness to assign a top rating. In fact, for Judge "B", there is a slight but insignificant trend in the direction of

superior adjustment for the homosexual group. By the method of "grand medians", chi square for Judge "A" is zero for the differences in adjustment between heterosexuals and homosexuals and for Judge "B" the difference is 2.31, which is insignificant.

The immediate question is the degree of agreement between the two judges. Although a Tschuprow coefficient between the ratings of Judge "A" and Judge "B" is only 0.33, it is important to point out that the situation is not as bad as this low coefficient would seem to indicate.

Table III shows that the two judges agreed exactly in 19 of the 60 cases, 8 being homosexual and 11 heterosexual. In 23 cases they disagreed by one rating step, 12 of these being homosexual and 11 heterosexual. *This means that in 42 out of the 60 cases there was either exact agreement or disagreement by only one step.* So it is safe to say that in two-thirds of the total distribution there is high agreement. An additional fact that may be pointed out is that 14, or approximately one-half, of the homosexuals were placed either in Adjustment Rating 1 or 2 by both judges.

How is one to interpret this finding? Is one to take it at face value and

TABLE III

Differences	Number of Subjects		
	Total	Homosexual	Heterosexual
0 (exact agreement).....	19	8	11
1 rating step.....	23	12	11
2 rating steps.....	14	7	7
3 rating steps.....	4	3	1
	60	30	30

assume that the Rorschach is a valid instrument for determining adjustment in the way in which we have defined it? If so, then clearly there is no inherent connection between pathology and homosexuality. But caution is needed. As clinicians, we are well aware, in daily practice, of the limitations of projective material analyzed "blind". Nevertheless, the quantitative results are striking, and they are confirmed in part by observations of the judges, as well as — and I say this with great caution — by life-history data.

But let us look at the results in the second task given the judges, that of distinguishing between matched pairs of homosexual and heterosexual records. This is a much easier task than that which the clinician ordinarily faces, of identifying homosexuality in one record out of many; and yet it proved to be a very difficult one. As a judge compared the matched protocols, he would frequently comment, "There are no clues;" or, "These are so similar that you are out to skin us alive;" or, "It is a forced choice;" or, "I just have to guess." The difficulty of the task was reflected not only in the comments of the judges but also in the results. Judge "A" correctly identified 17 of the 30 pairs, and Judge "B" 18 of the 30. Thus neither judge was able to do better than chance. In seven pairs both judges were incorrect, that is, identifying the homosexual as the heterosexual, and vice versa; in twelve pairs, correct; and in the remaining eleven they disagreed.

Let us look at the problems the judges faced. In some pairs of records none of the clues usually considered to be signs of homosexuality occurred. In some pairs the "homosexual clues" appeared in both records. These "homosexual clues" were primarily anality, open or disguised; avoidance of areas usually designated as vaginal areas; articles of feminine clothing, especially under-clothing, and/or art

objects elaborated with unusual detail; responses giving evidence of considerable sexual confusion, with castration anxiety, and/or hostile or fearful attitudes toward women; evidence of feminine cultural identification, and/or emotional involvement between males. When these clues appeared in neither or in both records, the judge was forced to look for other evidence, and most frequently depended upon peculiar verbalization, or responses with idiosyncratic meaning, or the "flavor" of the total record. When careful examination failed to reveal anything distinctive, the judge assumed that the more banal or typical record was that of the heterosexual, an assumption which was sometimes false.

After the judging was completed, and, indeed, even while it was in process, both judges commented on the fact that the records which they thought to be homosexual were unlike the ones they were familiar with in the clinic. They were not the disturbed records ordinarily seen. One judge, in the process of choosing, said, "It begins to look as if the homosexuals have all the good things: for example, M's and Fc." It may be pertinent to reiterate that I had made an effort to secure records of homosexuals who ordinarily would not be seen in a clinic. A discussion of the validity and reliability of homosexual signs is tangential to this symposium⁴, but I would point out in passing that my data indicate the need for a thorough-going reconsideration of this problem. At a minimum, healthy skepticism about many (but not all) so-called homosexual-content signs in the Rorschach is, I think, called for. The inability of the judges to distinguish the homosexual from the heterosexual records better than

⁴ A paper on "Homosexuality in the Rorschach" is in process of preparation. It will contain a full discussion of homosexual signs, as well as other aspects of homosexuality in the Rorschach.

would be expected by chance fits, I think, the finding on adjustment of the two groups. Some of the records can be easily distinguished; the fact that the judges agreed in their identification of twelve pairs indicates this. These were records of individuals with strong emphasis on "femininity" and/or anality. But apart from these, which constitute about a third of the group, the remaining two-thirds cannot be easily distinguished. If the homosexual records had been similar to those frequently seen in the clinic, that is, severely disturbed, there might have been greater probability that they could have been correctly identified, although this cannot be said with certainty. I have now seen about two hundred homosexual records and would be skeptical about my ability to identify correctly records similar to many in this group.

Although it is not pertinent to this symposium⁵ to present in detail the findings of the statistical comparisons of the two groups of Rorschach protocols, it is relevant to point out in summary form that most of these comparisons have failed to produce differences of sufficient magnitude to satisfy tests of significance. Several examples will suffice to make the point. Although most studies of homosexual protocols indicate greater productivity on the Rorschach, the difference between the two groups in the present study does not reach significance, though there is a trend in this direction ($t=1.389$, $df=29$, $p>.10$). A detailed comparison of total M's and human figures was made. Of some 25 computations, of differences between means of M% in various categories (such as flexor or extensor), differences in form level, variation in form level, etc., the only ones which approached low significance were the sigma of form level ($t=1.98$, $df=29$, $p>.05$), and O-minus percent ($t=2.262$, $df=29$, $p<.02$).

Cronbach's warning about inflation

of probabilities deters me from drawing too many conclusions from these two findings, although there is good theoretical rationale for them. The details of the analysis will be discussed more appropriately in a later paper. I cite these general findings at this time in order to show that despite considerable effort and the pursuing of many alluring possibilities, the efforts thus far to establish clear-cut differences between the two groups as a whole have been relatively fruitless. This, too, is consistent with the lack of significant differences between the adjustments of the two groups.

In addition to the overall adjustment ratings, each judge gave summary statements about each subject in a number of categories, including methods of handling aggression, affectional and dependency needs, and form of impulse control. When these statements were tabulated and subjected to statistical analysis, again no clear-cut differences emerged.⁶ For example, the statements about affectional and dependency needs have been tabulated in eleven categories, such as repressed or absent, ego-alien, integrates well, controlled by (that is, a dependent character). Four homosexuals were described as having affectional and dependency needs repressed or absent, while three heterosexuals were similarly described. Six homosexuals and six heterosexuals were described as integrating well these needs. It was said of one homosexual and one heterosexual that affectional and dependency needs were ego-alien. Chi square for differences between the number of heterosexuals and homosexuals assigned to all categories is 5.736, $df=10$, insignificant.

Let us turn now to the TAT and MAPS. These were administered as a single test, the selected MAPS items following the TAT. Altogether, 12 pictures were used: 3BM, 6BM, 7BM, 12M, 13ME, 16, and 18GF of the

⁶ The complete data will be reported in the future publication previously referred to.

⁵ See Footnote 4.

TABLE IV—Adjustment Ratings on MAPS-TAT

Group	Ratings				
	(Top) 1	2	3	4	(Bottom) 5
Homosexual.....	0	9	15	6	0
Heterosexual.....	0	7	19	3	1
Total.....	0	16	34	9	1

TAT; and from the MAPS, the Living Room, the Street Scene, the Bathroom, the Bedroom, and the Dream. It was hoped that the TAT and MAPS would be helpful in revealing current conflicts. The MAPS was used in addition to the TAT because of the opportunity it gives the subject for the selection of figures together with backgrounds with different situational pulls of particular importance in this study. Very fortunately, Dr. Shneidman agreed to analyze the MAPS and TAT protocols of the 60 subjects, using the same categories for analysis and overall adjustment as did the Rorschach judges. The service he performed, in terms of sheer energy alone, may be suggested by the fact that he began the task on week-ends in February, when the first fruit trees in our California garden were in bloom, and barely escaped before fruit appeared in July. The problem of identifying the homosexual protocol from this material was essentially a much easier one than that encountered with the Rorschach, since few homosexuals failed to give open homosexual stories on at least one picture. The second task given the Rorschach judges, of distinguishing the homosexual from the heterosexual records when they were presented in matched pairs, was therefore omitted. In every other respect, however, both with respect to task and procedure and including the recording, the TAT-MAPS judge proceeded as had the Rorschach judges. In the first 30 records the TAT and MAPS protocols for each man were analyzed together, with judgments given about overall adjustment rating and the other categories, such as methods of handling aggression, etc. In the second 30 rec-

ords, the TAT protocols were analyzed in succession, with judgments given, and then the MAPS—the judge not knowing which MAPS protocol corresponded with which TAT. This was done in an effort to prevent a “halo” effect, since homosexuality was openly revealed in some TAT records and not in the MAPS (for the same man), and vice versa. Some very interesting results were obtained, to which I shall refer later.

Table III shows the data on the adjustment ratings. The results are essentially the same as for the Rorschach. *The homosexuals and heterosexuals do not differ significantly in their ratings:* Chi square = 2.72, df = 4, $p = > .70$. This judge does not place a single subject in Rating 1, and he places only one in Rating 5 (a heterosexual). Determining the degree of agreement between the ratings on the Rorschach and TAT-MAPS constitutes a difficult problem, since two variables are involved: the judges and the test materials. A Tschuprow coefficient between either Rorschach judge and the TAT-MAPS judge is 0.20. Perhaps a more meaningful way of looking at the material is that between one Rorschach judge (Judge “A”) and the TAT-MAPS judge there is exact agreement in 15 of the 60 cases (8 homosexual and 7 heterosexual); for Judge “B” there is agreement in 16 cases. When the ratings of all three judges are put together, there is agreement on 14 homosexuals (approximately one-half of the group) as being 3 or better in adjustment, and 14 heterosexuals.⁷

⁷ A paper on “Homosexuality in the TAT and MAPS,” which will contain the full report, is in process of preparation.

Let me turn now to some qualitative descriptions of the homosexuals from the projective material. Perhaps even better than do the quantitative results, these will convey the problem. Man #16 is described by one judge in summary fashion as "an individual who has the most superb and smooth mastery of intellectual processes we have seen. Intellectualization is his major defense, although there is no compulsive flavor. On one side there is isolation of aggression. But essentially he is submissive, and since he is so sensitive and responsive, he cannot give in to the submissive seduction. His dependency needs are filtered and sublimated. He is the ethical type. Intellectual introspection must be his major preoccupation. He is really balanced on a razor's edge. An extremely clever person." He was correctly identified by this judge, who gave him a rating of 1, and incorrectly by the other judge, who placed him in Rating 2. The latter describes him in the following terms: "He gives an original twist to ordinary things. For him it is very important not to be conventional. He avoids it like the plague. He tries to keep it cool. I get the feeling that he wants to deny dependency. He has passive longings, but these would not fit in with his ego-ideal of being strong, superior, and wise. He would be able to be very rewarding emotionally. He does not wish to expose his aggression ordinarily, but would in relation to manly intellectual pursuits. I think he is heterosexual."

This man is described on the MAPS and TAT as being "the most heterosexual-looking homosexual I have ever seen. Up to the last two stories on the MAPS, I would say confidently, 'This is a heterosexual record.' His attitudes to sexuality are fairly moral. He has refined, quiet relationships to people. I would give him a rating of 2. The unconscious conflicts are very deep, but they are not disturbing clinically. No idea of clinical label. I would not have known he

is a homosexual except for a 'give away' on two of the MAPS stories."

This man is in his early 40's and holds two master's degrees in different artistic fields from one of the major educational institutions of this country. He had a long career as a college teacher—long, and apparently successful. He was caught in what was, to the police, suspicious circumstances with another man, and in the space of a few minutes his entire professional career was destroyed. He now is the manager of a magazine. Although in his early life he passed through the "cruising" stage, he now has highly stable personal relationships, including a "homosexual marriage." If one brackets the fact that he is a homosexual, one would think of him as being a highly cultured, intelligent man who, though unconventional in his manner of living, exhibits no particular signs of pathology. He has never sought psychological or psychiatric help. He has been a homosexual from adolescence, with no heterosexual experience or inclination.

Let me describe another (Subject #50) of these individuals who was placed in adjustment categories 1 or 2 by both Rorschach judges and misidentified as being a heterosexual. One judge described this man "as being so ordinary that it's hard to say anything specific about him. His impulse control is very smooth. He uses channelization rather than repression. Except for a little too much emphasis on conquest in heterosexual relations, he is well adjusted and smooth. His aggressive impulses are expressed in phallic gratification. Good fusion of tenderness and aggression, though he subjugates tenderness to phallic gratification. He must be a heterosexual. I would really have to force myself, to think of him as not heterosexual." By the second judge this man is described in the following terms: "He must be a very interesting guy. He must convey comfort to people. He takes essentials and doesn't get lost in details. A solid citizen, neatly and solidly in-

tegrated, with no specific defenses. Neither aggression nor dependency is a problem. I think that this man is heterosexual."

Man #50 is twenty-seven. He works in the electronics industry, in a very large firm in which he has a supervisory job. He lives alone in an apartment, though in an apartment house in which other homosexuals reside. His homosexual pattern involves rather a large number of homosexual partners. He is thoroughly immersed in the homosexual way of life, but apart from this I see no particular evidence of disturbance.

The TAT was analyzed first, and on the TAT he talks about homosexuality, thus revealing that he is a homosexual. The judgments to which the clinician comes are essentially that he is a promiscuous, driven person; that there are compulsive elements; that he goes from one relationship to another, not even aware of what he is seeking, a fairly lonely man, although with an adjustment slightly below 3. The first four stories of the MAPS were described by the judge as being definitely heterosexual. On the last story, the Dream, I should like to quote the judge directly: "I am surprised, because what this means is that this is the record of a homosexual; and it means that I had not seen this at all up to this point. It means, also, that he doesn't show it except over the jealousy and rivalry of homosexual partners. The record is clean psychiatrically up to this point. It wasn't especially rich, but it would certainly pass. I don't want to do fancy equivocation and say I see it all now, because I don't see a damn thing now. The Living Room is fine; it is as heterosexual as any story we have read in the entire series. The Street Scene simply shows the derogatory and disdainful attitudes that many heterosexual men have toward female sexuality. It is not the exclusive approach of the homosexual, though it is consistent with it. It has a heterosexual flavor. In the Bath, the privacy of the

father is interrupted, but this, if anything, would be heterosexual. The Bedroom is as normal a heterosexual story as I have ever read." The judge re-reads the story: "This is almost an encapsulated homosexual. I don't know if I am just being fancy, but we talk about a guy sometimes who functions fairly well until you mention 'Republican' or 'Communist', then you plug in a whole series of paranoid and delusory material; at this point the guy is just crazy. *This* guy has an encapsulated homosexual system. If I had not been shown the Dream story, I would have bet 85 to 15 that he was heterosexual, and maybe even more. I also feel that this guy is a male homosexual. He plays the aggressive, masculine role. But I am puzzled. I can hardly speak intelligently of the dynamics of the homosexuality when, until the last moment, I thought of him as heterosexual. I would give him a rating of slightly better than 3. Not a rich record; not creative and imaginative. It's a rather perfunctorily heterosexual record. I am amazed at this record. He has intense involvement with people. He is not a promiscuous homosexual. There is strong affect. He practically acts like a husband and father. One of the statements about him is that he is a normal homosexual. I mean it's like a guy who has a tic: ordinarily we say he must have a very serious problem. Maybe he does, but if you examine the material of lots of people who have tics, you will find some people who look pretty good, if you think of normal functioning. Then, after you have said this, someone tells you, 'Yes, but he is one of the guys who tics.' And you say, 'Well, he looks clean to me.' And that is what this record looks like. This record is schizophrenic like I am an aviator. If you want proof that a homosexual can be normal, this record does it."

Man #49 is described by Judge "A" as follows (Rating 1): "This record presents less problems of any sort than any other we have seen. The mental

type is very clear-cut, calling a spade a spade. Looks like a well-integrated person. Impulse control really smooth, because he permits all impulses to express themselves in a context — both dependent and aggressive. Of all the cases, the best balance of aggression and dependency we have seen. No problem, clinical or otherwise. Relations with others skilful and comfortable." Judge "B" (Rating 2; if not 2, a 1): "Able to integrate well with all stimuli. Effective functioning. Heterosexual adjustment. Defense used: some repression. Not an 'acter outer.' Avoids intense emotional stimuli because they are disorganizing to him."

The TAT and MAPS were analyzed separately. In the first four stories of the TAT, the subject was described as being a thorough-going heterosexual. In 13MF the judge comments, "Here we have a fairly straightforward heterosexual story." In the blank card in the TAT, the judge says, "Here this guy opens up more than on the others. He is a sleeper. This is one of the best-adjusted and, in a sense, one of the most paradoxical records I have seen. What is here is indecision and a schizoid feeling. So this is not in any sense a superior personality. There is some withdrawal and some aridity. This is not an outgoing, warm, decisive person. It is a constricted, somewhat egocentric, somewhat schizoid, perturbed, a little guilty fellow. Even so, it is not a tormented record and is not necessarily a homosexual record. He talks about this quite casually and has a fairly good adjustment to his homosexuality. This guy is a very interesting person and quite a complicated guy. In many ways he is both well adjusted to his homosexuality and the kind of guy who could almost be heterosexual in a way that other homosexuals could not be. I don't think he would be swishy or over-masculine. He would pass. I find him very difficult to rate. I can't rate him as 1 or 2. To call him average is innocuous. He doesn't merit 5 or 4. I don't know. I will call him

3, but it doesn't give the flavor. I don't know what to do."

At another time the same judge analyzed the MAPS protocol, in which no homosexual stories are given. The judge comments: "I want to comment on his insistence on the normal situation and his freedom to use the nude. I think this is a very healthy guy, in a somewhat barren way. I have a feeling that this is a kind of emancipated person who has not made an issue of being independent but is able to stand on his own two feet. The fact that he doesn't have rich dynamics robs him of being interesting, creative, and unusual. I rate him as a 2 for sure. I don't know what a 1 would be. He handles hostility and sexuality easily. One shortcoming in the record—not pathological—is the conventionality; and I imply by that a touch of emptiness. He is able to love and to dislike. He is a good father and husband and would be a steady employee. I could see him as having a better-than-average job. He would not be a creative or imaginative person. I don't mean a Babbitt, but he would not take the risk of loving deeply. He is a middle-of-the-roader. This is as clean a record as I think I have seen. I don't think he has strong dependency needs. He is comfortable, and in that sense he is strong. I imply that this is a heterosexual record specifically."

This man is 37, and he works in a ceramics factory doing fairly routine work. He has a "homosexual marriage" of some six years' duration. He tried very hard to change his sexual pattern but was unsuccessful and has now accepted the homosexual "life." He has not had heterosexual experience.

Out of the 30 homosexual men, there were seven who were placed by one or the other judge in rating categories 4 or 5. Since these individuals have what is probably the more expected personality picture, I should like to describe several. One of these is #6. He was rated by one judge at a 5 level and by the other judge at 2.

By the judge who places him at 5, he is described as a "pseudo-normal, near-psychotic, with brittle personality organization which is fairly stabilized. His reality testing is uncannily sharp, but he is almost autistic. His chief defenses are projection and intellectual control. There are strong castration fears, strong orality, and the aggression is projected or transformed into irony. The emotional needs are withheld away."

Man #52 is described by one judge who places him in the 4 category, as "a personality which is basically pathological. An anal character, with a strongly destructive flavor. Anal-sadistic. A past-master of intellectualization, though superficially socializes it. Just enough reality testing to be clinically normal. Impossible to separate the hysterical and paranoid elements. Dependency needs are repressed or crippled. Very narcissistic and incapable of guilt. A cloak of righteousness over it all." The second judge describes him in the following terms: "There is too much unconscious breaking through. Some ideational leakage. A chronic situation to which he has made an adjustment. He is not paranoid, but obsessive in a paranoid structure. On the surface he operates smoothly. Emotional relationships will lack in depth and warmth. Uses over-ideation as a defense. His primary method is intellectualization. His dependency needs will make him appear demanding. Essentially a character picture."

Of a somewhat different nature is #28, who is placed by both judges at the bottom level of adjustment. Described by one judge as "very defensive; every impulse ego-alien. Uses denial, intellectualization, and repression. High level of narcissism. Regresses easily into the infantile. The most unbalanced record one could find." By the other judge: "This looks like a clinic record. An anxiety state, pre-psychotic. Is more scared of his own fantasies than the world. People present too many problems; he tries

to preserve distant relations. Doesn't want to see sex in people. Sex is very repulsive."

Thus, there is no single pattern of homosexual adjustment. This had been anticipated. The richness and variety of ways in which the homosexual adjusts are as difficult to summarize as to summarize 30 full, qualitative pictures of 30 individuals. If I were to read pictures of heterosexuals with the same level of adjustment, the pictures would be essentially the same, with the exception of the bottom range, where one does not find the marked anal-destructive character-structure or the emphasis on "femininity" (which may occur at other levels, also).

That homosexuality is determined by a multiplicity of factors would not now, I think, be seriously questioned. That the personality structure and adjustment may also vary within a wide range now seems quite clear. It comes as no surprise that some homosexuals are severely disturbed, and, indeed, so much so that the hypothesis might be entertained that the homosexuality is the defense against open psychosis. But what is difficult to accept (for most clinicians) is that some homosexuals may be very ordinary individuals, indistinguishable, except in sexual pattern, from ordinary individuals who are heterosexual. Or—and I do not know whether this would be more or less difficult to accept—that some may be quite superior individuals, not only devoid of pathology (unless one insists that homosexuality itself is a sign of pathology) but also functioning at a superior level.

But before we accept this hypothesis as a plausible one, we must look carefully at the limitations of the evidence. We have already spoken of the necessity of caution in accepting as valid the results of "blind" analyses of projective test protocols. As clinicians, we are also cautious about accepting an analysis which is not "blind." It may be that the primary psychological defect, if there is one, in

the homosexual lies in a weakness of ego-function and control and that this cannot be adequately diagnosed from projective test protocols. As one psychiatrist puts it, the material produced in the Rorschach is like that produced on the analytic couch. Two men may produce very similar material on the couch, but the difference between them is that one—the normal—gets up at the end of the hour and resumes his normal functioning, while the other does not. Another way of looking at the data from the projective tests may be that the homosexual "pathology" occurs only in an erotic situation and that the homosexual can function well in non-erotic situations such as the Rorschach, TAT, and MAPS. Thus, one could defend the hypothesis that homosexuality is symptomatic of pathology, but that the pathology is confined to one sector of behavior, namely, the sexual.

As I listened to each of the three judges analyze the 60 records, I was very much impressed with the usefulness of the projective tests, when interpreted by expert clinicians. Often, the picture of the personality which emerged bore such a striking resemblance to the man as I knew him from many hours of interviewing and testing that it was difficult to believe that the judge did not have detailed personal knowledge as well. Of course there was great discrepancy in some cases. The full report of the material will contain all of the evidence of the congruency or lack of congruency between the life-history materials and the projective analysis.

When I speak of the life-history materials, I am highly conscious of the fact that these have not been *objectively* rated for adjustment. This presents a problem for the future similar to that of the TAT and MAPS, only more so because of the difficulty of controlling for theoretical bias in judging open homosexual material. Final conclusions cannot be drawn until this is done. It can now be said with some certainty, however, that at

least in one respect the life-history data from the two groups will differ: namely, in the love relationships. Comparisons between the number and duration of love relationships, cruising patterns, and degree of satisfaction with sexual pattern and the love-partner will certainly show clear-cut differences.

A question also arises about the size of the sample used. It is possible that much larger samples—for example, 100 in each group—would show differences. But would we not, in this case, be dealing with a different question, namely, "How many homosexuals, as compared with heterosexuals, are average or better in adjustment, and how many are worse than average?" It seems to me that for the present investigation the question is whether homosexuality is necessarily a symptom of pathology. All we need is a single case in which the answer is negative.

What are the psychological implications of the hypothesis that homosexuality is not necessarily a symptom of pathology? I would *very tentatively* suggest the following:

1. Homosexuality as a clinical entity does not exist. Its forms are as varied as are those of heterosexuality.
2. Homosexuality may be a deviation in sexual pattern which is within the normal range, psychologically. This has been suggested, on a biological level, by Ford and Beach (2).
3. The role of particular forms of sexual desire and expression in personality structure and development may be less important than has frequently been assumed. Even if one assumes that homosexuality represents a severe form of maladjustment to society in the sexual sector of behavior, this does not necessarily mean that the homosexual must be severely maladjusted in other sectors of his behavior. Or, if one assumes that homosexuality is

a form of severe maladjustment internally, it may be that the disturbance is limited to the sexual sector alone.

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Childhood Memories as a Projective Technique

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The significance of earliest childhood memories has long been recognized in psychology, although the various theoretical viewpoints of individual authors have determined the particular frame of reference in which they were interpreted. According to Freud (8, 9), the early recollections which were elicited by patients during analysis served as "concealing memories," or a substitute for other anxiety producing situations whose content was repressed. He pointed out their manifest innocuous and indifferent quality, as contrasted with the richness of the actual childhood experiences. Their origin was suggested by Fenichel (7), who related these memories to the ego's struggle between acknowledgment and denial of unpleasant facts.¹ This repression represented a progressive forgetting of infantile sexuality that cannot be integrated in the developmental process with the greater realization of reality and the demands of the super-ego. To protect the individual from full cognizance of the anxiety provoking content, these substitute memories offered to consciousness, like dreams (8, 9, 16), utilized the defense mechanisms of displacement, condensation, and symbolization.²

Schachtel (17) suggests that if childhood memories could be preserved in their original form, they would be adverse to our social civilization, which is not based on the primary pleasure principle. Because of their ego-disrupting content and the complex processes involved in their re-

pression, Freud believed that only thorough analytic work could reveal insight into the memories.

In contrast to this, Adler (1) does not emphasize the difficulty involved in their interpretation. He asserts that earliest childhood memories actually reflect the "style of life," or the goal idea which directs the behavior of the individual. The memory is determined by the necessity for adjustment.³ If faced with a problem situation, he will bring up those memories which lay the foundation for his plan of action. If the style of life alters, the earliest incidents recalled may change. It is also of no consequence whether the memories offered are those specifically remembered by the individual himself. Memories told by parents or relatives may be accepted as one's own if they are not alien to the particular concept of life.

In essence, both Freud and Adler relate the production of earliest memories to the necessity for maintenance of the individual's psychic equilibrium. Adler assigns a goal directive and ego stabilizing function to the earliest recollection, while the "concealing memory" described by Freud, serves to prevent the ego-disrupting content of the original incident from emerging into consciousness. They both agree that the recall is not a chance occurrence and is motivated by inner needs. The major point of difference is related to their direct accessibility to interpretation. On one hand, Freud claimed that

¹ "If in this situation, a kind of substitute object can be offered to perception or memory—one which though related to the objectionable fact is harmless—the substitute will be accepted in favor of repression." (7)

² "The forgetting in all cases is proved to be founded on the motive of displeasure." (8)

³ The memories represent to the person the "Story of my Life; a story he repeats to himself to warn him or comfort him, to keep him concentrated on his goal, to prepare him, by means of past experiences, to meet the future with an already tested style of action." The individual states, "Even in childhood, I found the world like this." (1)

analysis of the individual's anamnesis was necessary for their interpretation in order to gain insight into the original repressed content, and on the other, Adler stressed their direct interpretive value. To Freud, the point of emphasis was the underlying conflictual material, while to Adler, it was the adjustive function and life goal, as reflected in the recollection.

Greenacre (11) points out that the earliest memory frequently illustrates the "central theme" of the neurosis, especially when it is in the nature of an unpleasant event which is told readily by the patient, a degree of isolation from the disturbing content being achieved by an almost complete withdrawal of affect. This neurotic "theme" is generally rigidly defended and resists analysis. In this relation, Chess (4) states that the neurotic person, in striving to maintain his precarious equilibrium, must structure the environment in such a way as to preserve this tenuous balance. Brodsky's article on the "Diagnostic Importance of Early Recollections" (3), declares that only those memories are recalled that can serve as a justification of the individual's approach to life at the time they are reproduced.

However, relatively few studies in the literature directly concern the use of earliest memories in differential diagnosis. Eisenstein and Ryerson in 1951 (6) pointed out the relation of the type of the first memory to clinical diagnosis of psychiatric patients. For example, they found that in psychosomatic disorders, the first memory often reveals the "organ of choice" for the psychological expression of anxiety. The memories of anxiety hysterics stress the use of displacement and symbolization as early defense mechanisms, while in the recall of obsessive-compulsive neurotics, a strong prohibition is often mentioned which corresponds to the severity of the superego indicated in these cases. It is also shown that the recollections of schizophrenics are often characterized by emphasis on a

solitary situation, one concerning autoerotic activity, and frankly sexual or Oedipal sexual situations. The authors suggest a correlation between earliest memories and the material that is revealed on the Rorschach. In conclusion, they state that "the first conscious memory is a symbol of the patient's inner orientation and a declaration of his basic problems." They add that it is the "clearest derivative of forgotten infantile conflicts." A study made by Friedman (10) also attests to the potentialities of earliest memories as a diagnostic technique. In the recall of earliest memories by patients,* she found differentiating features between those diagnosed as schizophrenic and neurotic. Neurotics, for example, are more likely to remember illness in childhood with emphasis on over-protection and acceptance, while the psychotic describes it as an occasion of neglect and confusion.

Earliest memories have been found to be a valuable addition to other test data. Kadis, Greene, and Freedman (13) illustrate the utilization of memories as an aid in clarifying "the way in which a subject acts upon his latent trends"; thereby organizing projective material around a point of relevance.

The results of the foregoing survey of literature indicate the need for a more extensive study of the value of the earliest memory as a projective technique. If it can be of value in facilitating a diagnostic formulation, it brings us closer to the goal of making individuals more accessible for understanding and therapy.

PROCEDURE

This study was designed to test the hypothesis that there is a significant correspondence between the material revealed in earliest childhood memories and other projective data. The sample consists of 25 female patients ranging in age from 15 to 51 years. Psychological diagnosis indicated that the group was com-

posed of 11 psychotic and 14 non-psychotic individuals.

A staff psychologist administered a full test battery to each patient consisting of the Wechsler-Bellevue, Rorschach, Bender-Gestalt, and House-Tree-Person drawings. In addition, each patient was asked, "What are your earliest childhood memories?" After the patient stated her memories, she was specifically asked, "What is the earliest incident that you can remember in which your mother was involved?" and "What is the earliest incident that you can remember in which your father was involved?" These earliest memories were written on separate sheets of paper and given to the experimenter. The age of the patient was the only additional information received. The experimenter independently wrote up a report based only on the memories, and the staff psychologist wrote a report on the findings of the regular test battery. The two reports were compared utilizing a check list of items consisting of descriptive terms which had been chosen previously and specifically defined in order to eliminate as much ambiguity as possible.

The items used to evaluate personality traits were defined on the check list as follows:

I. Perception of the Environment:

Threatening Physically — Sees the world as physically injurious to her well-being. She fears accidents or is the victim of physical assaults.

Threatening Emotionally — Apprehends attack upon her sense of self-esteem. Expects other people to belittle, ridicule, or criticize her.

Rejecting — The people with whom she desires contact tend to ignore or desert her.

Friendly — Her surroundings are seen as accepting, and pleasant relationships are anticipated.

Frustrating — The things she desires are denied or surrounded by barriers. Her wants have not been satisfied.

Nurturing — Objects and people are looked toward primarily as a source of supplies.

Overpowering — She feels weak in comparison to the large, overwhelming world around her.

Subservient — She looks down at others and feels above them.

Depressing — Her surroundings are perceived as bleak, empty, and sad.

Vague or Strange — She perceives objects and people as vague, distant, and unclear.

II. Reaction to the Environment:

Direct Aggression — Openly expresses hostility, either verbally or physically.

Indirect Aggression — Expresses hostility by devious methods ("accidental" acts, cynicism, etc.) or by passive resistance (stubbornness).

Independence — Attempts to secure her needs by means of her own volition.

Dependence — Relies upon others for the gratification of her needs.

Dominance — Openly tries to manipulate others to serve her own desires.

Compliance — Submits to others or conforms closely to conventional modes of behavior.

Projection — Blames others for her difficulties or attributes her own socially unacceptable desires to others.

Intropunitiveness — Blames herself for misfortunes that occur. Evidence of self-derogation and low self-esteem.

Withdrawal — Avoids conflict as much as possible.

Reaction Formation — Prevents unacceptable desires from being expressed by exaggerating opposed attitudes and types of behavior (cleanliness, moralism, etc.).

Indecisiveness — Torn by conflict: unable to make decisions.

Congeniality — Attempts to win the affection of others by being ingratiating and friendly.

Achievement — Strives to accomplish something recognized as a constructive and creditable achievement.

Fantasy Retreat — Withdraws into fantasy in order to achieve gratification of frustrated desires in imaginary acts.

RESULTS

1. The number of check list items upon which both the experimenter and staff psychologist agreed was compared to the number of items upon which they disagreed. A "t" test computed to ascertain whether these two methods of personality analysis

(Earliest Childhood Memories and the regular test battery) are measuring the same traits was found to be 4.65 and significant at the .001 level.

2. The number of items checked using the earliest memories was compared to the number of items checked using only the regular test battery. A "t" test calculated to see if the amount of information obtained from the two methods was similar yielded a t of 2.94, a significant difference at the level of .01.

3. The number of items checked using only the earliest memories was correlated with the number of items checked when the test battery alone was used. This was done to take into account the extent to which the two methods vary in relation to the quantity of information each yields. According to the results, the r was .66, the critical ratio 3.3, and the level of significance .001.

4. The memories were also classified by content into several categories and the content of memories offered by the psychotic and non-psychotic groups was compared. Twelve categories including such items as food, sex, punishment, etc., were formulated because they were most suited to the range of subjects covered by the memories; each recollection was checked off in one or more categories. Since only a very small sample fell

into each content category, statistical analysis was not attempted. Nevertheless, the data are presented below as suggestive of further detailed investigation.

DISCUSSION

When the earliest memories and the psychological reports based upon the interpretation of a battery of projective techniques were analyzed independently, there was significantly more agreement than disagreement in relation to the type of material revealed. The amount of information elicited from the earliest memories also correlated to a significant degree with the amount of information obtained from the psychological report. While it was found that significantly more information was received from the psychological report than the earliest memories, these memories appear capable of serving as a rapid, valuable sample of the type of data likely to be reflected by the longer time consuming examinations.

Although the data derived as a result of assigning each memory to a content category was not subjected to statistical evaluation because of the small sample within each of the categories, we noted that in the psychotic group, memories concerning sex and punishment appear more frequently than in the non-psychotic group. On the other hand, non-psychotics more frequently give recollections that can be assigned to the categories "Food," "Play," and "Illness." In this sample, no psychotics gave memories in the categories "Morality" and "Animal." As a group, "Food," "Play," "Illness," and "School" are the most frequent memories, and those concerning "Birth of a Sibling," "Death," and "Morality" are the least frequent. It should be emphasized again, however, that since no statistical analysis was undertaken on memory content distribution within the psychotic and non-psychotic groups, these results do not imply a significant difference between group frequencies.

Content of Memories in Psychotic and Non-Psychotic Groups

Content	Psychotic	Non-Psychotic	No. in Both Groups
Sex.....	4	0	4
Punishment.....	5	1	6
Injury.....	3	3	6
Birth of Sibling.....	1	1	2
School.....	3	4	7
Rejection.....	2	4	6
Death.....	1	2	3
Food.....	3	8	11
Illness.....	1	6	7
Play.....	1	7	8
Animal.....	0	4	4
Morality.....	0	3	3
Total Number.....			67

SUMMARY

The foregoing study was designed to compare the type and amount of information yielded by the earliest childhood memories with a regular projective test battery consisting of the Wechsler-Bellevue, Rorschach, Bender-Gestalt and House-Tree-Person drawings. The results indicated that there was a significant similarity between the type of content obtained by using the two procedures, although quantity of information was more extensive on the test battery. Differences in type of content were also noted between the psychotic and non-psychotic groups but because of the limited sample falling within each content category, statistical analysis was not attempted. The advantages of utilizing childhood memories as a projective technique were the ease and rapidity of obtaining them as well as their function in serving as a check upon other projective materials.

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Psychological Indices in the Selection of Student Nurses

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In order to discover the extent to which the Rorschach technique and the Wechsler-Bellevue Intelligence Scale might be profitably employed in the selection of student nurses, a study of one-and-one-half years duration was carried out. The attempt was made to predict success in nurses' training from the results of these tests alone.

PROCEDURE

Eighty girls were interviewed before entering training. In the course of two or three visits, each girl was given an individual Rorschach and Wechsler-Bellevue, and a short case history was taken. The Wechsler records were scored in the usual manner. The Prognostic Rating Scale² was applied to the Rorschach protocols. (Since this rating scale was designed to measure potential ego-strength, its use in the present study was based on the supposition that ego-strength may play a significant part in coping with the stresses involved in nurses' training.)

Subsequently the girls' progress in training was followed for one year, during which time they received a series of grades for their academic work (based on objective-type examinations) and for their efficiency on the wards (based on subjective grading by three supervisors).

Product-moment correlations were computed on the relation of the test

scores to actual achievement as indicated by these grades.

DESCRIPTION OF SAMPLE

Of the 80 girls originally tested, 12 dropped out of training within a few months, so our data was computed on the remaining 68. The group ranged from 17 to 29 years of age, with the great majority being 18 or 19 years old. All except two girls were Catholic, and most came from upper middle class Canadian homes. All had completed high school, some had had a year or two of college, the majority had worked for a year or so in semi-skilled occupations (e.g. telephone operator), though 19 had had no work experience. Professed reasons for entering nursing were un-specific, usually of the "It's something I always wanted to do" type.

TREATMENT OF DATA

The case history records seemed barren of any prognostic material. Almost every girl sketched a rosy picture of her life and denied any serious conflicts. Consequently this information was not utilized in predicting success in training.

Individual verbal and performance IQ's did not show any outstanding relationship to the various achievement grades, so only full-scale IQ's were used in computing correlations. Nor did examination of the Prognostic Rating Scales appear to warrant the manipulation of any of the single subscores, so only the total prognostic score was used here.

Thus, two predictive scores were employed: full-scale IQ (referred to as IQ), and the total ego-strength or prognostic score derived from the Prognostic Rating Scale (referred to

¹ For their work in the collecting and scoring of the material used in this study, I am indebted to Mr. Pierre Mathieu, Mrs. Shirley Hallowell, and Miss Andree Lariviere. For her kind cooperation, I wish to thank Sister Mary Felicitas, Director of Nursing at St. Mary's Hospital.

² For a detailed description of the Prognostic Rating Scale, see *J. proj. Tech.*, 1951, 15, 425-428.

as PRS). These two criteria were shown to be relatively independent ($r = .10$).

Three achievement scores were employed: academic grade (AG), which was an average of all classroom examinations; ward grade (WG), which was an average of the ratings assigned to each student by the ward supervisors; and total nurse grade (TNG), which was simply the sum of the first two, as it was felt by the nursing staff that academic and ward work are of equal importance and neither should be weighted in an overall assessment of a student's capabilities.

The supervisors' ratings, from which the ward grades were derived, were based on four criteria:

1. Dependability (Does the student attend to her duties conscientiously? Is she always on time? Can one feel sure she will do a job without being asked twice?)

2. Care of Patient (Does she administer her duties quickly and efficiently, without causing undue frustration or concern to the patient? Is her attitude to patients pleasant and sympathetic? Is she relaxed and cheerful in dealing with them? Does she do her work accurately?)

3. Relationship with Superiors (Does she understand and follow orders easily? Does she manifest any resentment of authority?)

4. Relationship with Peers (Does she work well in a team? Is she friendly, willing to go out of her way to help others? Is she popular with the other nurses on the ward?)

All scores were expressed in standard units, and eight product-moment coefficients were computed. Finally, one multiple correlation coefficient was computed, utilizing a combination of IQ and PRS to predict TNG.

RESULTS

The range of IQ's extends from 96 to 133, Mean IQ is 113. Standard deviation is 8.23. The range of PRS

is from 0.2 to 11.7. Mean PRS is 6.25. Standard deviation is 2.58.

The correlations run as follows:
 IQ and PRS = .097 (not significant)
 AG and WG = .439 (significant at the 1% level of confidence)
 IQ and AG = .434 (significant at the 1% level)
 IQ and WG = -.037 (not significant)
 IQ and TNG = .457 (significant at the 1% level)
 PRS and AG = .281 (significant at the 5% level)
 PRS and WG = .142 (not significant)
 PRS and TNG = .412 (significant at the 1% level)

Multiple correlation utilizing IQ and PRS to predict TNG yields a coefficient of .586 = .59, which is significant at the 1% level of confidence.

DISCUSSION

From these results it seems clear that, at least in the somewhat restricted area of nurses' training in a Canadian Catholic hospital, both intelligence as measured by the Wechsles-Bellevue and ego-strength as estimated by the Rorschach Prognostic Rating Scale are significantly related to overall achievement. There appears to be no a priori reason why the same would not be true in other, non-Catholic, Canadian or American hospitals.

These findings are of interest particularly because assessment for aptitude in fields like nursing has traditionally been approached through the use of interest, aptitude, and vocational tests, rather than the employment of more basic, general tools like the Wechsler and Rorschach. It seems to the author that whereas the former tests afford an appraisal of certain discrete surface characteristics of personality, the latter, in comparison, reveal something of the more generalized emotional and intellectual substratum. If that is the case, then it is here demonstrated that the strength or development of this substratum manifestly influences one's

capability even in so defined an endeavor as learning to become a nurse.

It is indicated, in any case, that wider use could be made of conventionally clinical tools like the Rorschach and Wechsler in the field of vocational assessment.

If we examine the findings in detail, we may note that both IQ and PRS correlate better with Total Nurse Grade than with Academic or Ward Grade alone. As a matter of fact, neither of our test measures can predict Ward Grade at all better than chance. One may ask whether this is occasioned by the fact that Ward Grade was based on the supervisors' subjective ratings, which may well have been influenced by personal likes and dislikes. However, one cannot give too much weight to this supposition, since an inner consistency of performance is shown in the fact of a significant correlation between Academic and Ward Grades themselves.

In all, IQ and PRS appear to be of equal value in predicting overall nursing ability, though IQ shows some superiority in predicting academic ability alone. A combination of IQ and PRS appears to offer a better basis for prediction than either of these measures used singly.

Of ancillary interest is the fact that no consistent test pattern was found in the records of those 12 girls who dropped out of training. Nor

were their reasons for leaving uniform; they ranged from virtual expulsion for unmannerly behavior, to family problems, to need for psychiatric treatment.

It may also be noted that the barren quality of the case history material seemed to the workers involved to be based on several factors. The girls may have felt that admission of any problems would prejudice their chances of being accepted for training; they were also of an age- and social-group where the pursuit of 'good times' is more central than dwelling on personal failings; and it must be recognized that upper-middle-class Catholic upbringing does not encourage one to express dissatisfaction or friction related to one's family.

SUMMARY

A study was carried out using the Wechsler-Bellevue and Rorschach tests to predict success in nurses' training. From the results it appears that intelligence as measured by the Wechsler and ego-strength as estimated by the Rorschach Prognostic Rating Scale are significantly related to achievement in nurses' training. It would seem advisable for tests such as these to be employed more widely in the fields of vocational assessment and selection.

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An Investigation of the Rorschach White Space Response in an Extratensive Experience Balance as a Measure of Outwardly Directed Opposition¹

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INTRODUCTION

Rorschach (28) in his original publication on his Ink Blot Test suggested that the presence of a white space response (S) always indicated some sort of oppositional trend. When S is found in conjunction with an extratensive experience balance (extratensive E.B.), Rorschach said the opposition would take "the form of some 'outward' opposition, defiance, a tendency to indulge in polemics, to make contradictions and to be aggressively stubborn" (28, p. 200). Most Rorschach experts are in substantial agreement (6, 7, 9, 10, 17, 20, 24, 25, 26). Lacking any universally accepted definition of "opposition," it will arbitrarily be assigned the following definition for the purposes of this study. Opposition is a tendency to resist, oppose, defy, rebel against, contradict, or in any way refuse to comply with environmentally produced suggestions up to and including the most extreme form of carrying out the opposite of what is suggested.

It may be noted that as here defined, opposition appears to be on a continuum with the trait of positive suggestibility, so that one is the reverse of the other, and between them is a state which might be called either nonsuggestibility or nonopposition.

Previous studies of the white space response. Most earlier studies of S

used markedly weak criterion measures such as diagnostic categories (8, 16, 30). Most recent information about S has been a by-product of studies whose primary purpose was something quite different (11, 21, 22, 23). Several factor analytic studies of the Rorschach have included S (1, 32, 33), but results are unclear.

But four studies have been concerned solely or primarily with S (3, 15, 19, 29), and have attempted to use something other than diagnostic categories as the validating criterion.

The present study is considered a methodological improvement on any one of these four, insofar as each of them failed to do one or more of the following: 1. Use the individually administered Rorschach rather than one of the group administered versions. 2. Use adequate, representative behavioral criteria rather than paper and pencil type personality questionnaires or rating scales alone. 3. Relate S to a relatively sharply defined personality trait (oppositional tendencies directed towards the environment) rather than to the more general trait of hostility. 4. Take account of the patterns of Rorschach scores by considering S in relation to but one type of E.B., rather than lumping all S responses together indiscriminately. 5. Control the response total (R) on the Rorschach Test since significant relationships have been reported between R and S, M, FC and CF (14, 15, 27). 6. Use standard procedures in administering the Rorschach.

The specific purpose of this study is to investigate the validity of the presently widespread interpretation

¹ A modification of a portion of a thesis submitted to the Department of Psychology of Northwestern University in partial fulfillment of the requirements for the Ph.D. degree. The writer is indebted to Professor Robert Watson under whose direction the research was undertaken, and to other members of the faculty who were very generous with their help.

of S in an extratensive E.B. as indicating outwardly directed opposition.

PROCEDURE

The criterion measures. There is evidence that neither oppositional tendencies, nor suggestibility, are unitary traits (2, 13). Rorschach interpreters provide no clear operational definition of what they mean by "opposition." Therefore an attempt was made to select criterion measures which would serve as a fair sample of the many theoretically possible types of opposition. Six criteria were chosen which seemed to be related to six apparently different aspects of oppositional behavior.

1. Hull Sway Test (13, 18). The subject stands with feet together and eyes shut, while the researcher's recorded voice repeatedly tells him he is swaying forward. In a second form the voice tells him he is swaying backwards. A score was derived from each form. The test appears to measure the degree to which a person unconsciously accepts, resists, or does the opposite of a motor movement, following the repeated suggestion that such a movement will take place.

2. Ink Blot Suggestion Test (13). The subject is shown each card of the Rorschach. Two frequently seen and two poor, infrequently seen percepts on each card are suggested to him with the comment that many people see them. Four scores are derived for this test. The negativism score measures the refusals of the subject to see the frequently seen percepts. The non-negativism score measures refusals of the subject to be swayed either against the frequently seen, or towards the infrequently seen, percepts. The suggestibility score measures the acceptance by the subject of the infrequently seen percepts. The total score is a weighted addition of the other three. This test appears to measure the extent to which suggestions cause a subject to report percepts for which there is no objective

basis and to refuse to report percepts for which there is an objective basis.

3. Opinion Questionnaire (4). The subjects indicated agreement or disagreement with a series of opinion items, as well as how sure they were of their opinion. When given the questionnaire a second time, twelve days later, they were allowed to know the group's opinion before answering each item. Three scores were derived from this questionnaire. The negativism score measured changes away from the group opinion. The suggestibility score measured changes in the direction of group opinion. The total score was the difference between the other two scores. This questionnaire seems to measure a change of attitude by the subject on learning the attitude of the majority of his compeers.

4. "No" answers on the Opinion Questionnaire. This score indicated the number of times the subject chose the "No" answer on the first administration of the Opinion Questionnaire. It seems to measure a general response tendency on the part of the subject to give negative rather than positive replies to questions, regardless of the content of the question.

5. Instructions Test. As a preliminary to some of the other tests the subject was asked to give certain basic information concerning himself in certain specific ways, as by circling, checking, underlining, etc. The score was the number of times the subject followed instructions exactly. This appears to measure the extent of a subject's natural, uncoerced obedience to directions.

6. Self-rating scale. The subject rated himself as to oppositional behavior, suggestibility, and aggressivity, as well as on seven other traits which served as misleads. For each trait the rating consisted of choosing the one out of seven statements which he thought most nearly applied to himself. Three scores were derived, one for each of the three traits.

TABLE I. Reliability of the Criterion Measures

Criterion Measure	Type Reliability	Coefficient	Spearman-Brown
Ink Blot Suggestion Test			
Negativism score	Split-half	.608	.756
Non-negativism score	Split-half	.311	.474
Suggestibility score	Split-half	.723	.839
Total score	Split-half	.759	.863
Hull Sway Test			
Forward <i>vs.</i> backward	Alternate form	.701	
Forward: first 50 <i>vs.</i> last 50 seconds	Split-half	.789	.918
Opinion Questionnaire			
Negativism score	Odd-even	.506	.672
Suggestibility score	Odd-even	.457	.627
Total score	Odd-even	.508	.674
Instructions Test			
Test-retest		.546	.706
"No" answers	Odd-even	.275	.431

TABLE II. Intercorrelations of the Criterion Measures†

Criterion Measures	Criterion Measures				
	Instruct.	Blot Total	"No" Answer	Sway Forward	Neg. Rating
Opin. Total	-.049	.244*	-.056	.099	-.061
Instructions		-.048	-.098	-.094	.000
Blot Total			.468**	.075	.020
"No" Answers				.114	-.071
Sway Forward					-.297**

* Significant at .05 level.

** Significant at .01 level.

† Total score on the Opinion Questionnaire and forward sway score on the Hull Sway Test were reversed so that high score indicates negativism and low score suggestibility for all of the criterion measures.

Lacking a second administration of the rating scales, no measure of their reliability is available. Reliabilities of the other criteria are given in Table I.

Correlations between the total scores for all criterion measures were computed. Results are given in Table II.

Rorschach administration and scoring. The Rorschach was administered and scored in the manner described by Beck (5, 6, 7). Spot checks on the author's scoring of three of the Rorschach records by 12 independent scorers indicated an average agreement of 89 percent between the present author and the independent scorers.

Administration of the tests. All subjects were drawn from a Northwestern University child psychology class

of 258 students. The Opinion Questionnaire and the Instructions Test, which could be group administered, were given twice, with a twelve day interval between presentations, to all class members. On the second presentation the Opinion Questionnaire showed the majority opinion of the class. A total of 204 students were present at both sessions. From this pool of potential subjects 101 student volunteers were drawn for the individually administered tests. The average age of the 24 males was 20.3 years, and that of the 77 females was 19.7. When the subject arrived for individual testing the author established rapport and then administered the Rorschach, gave the subject the two sections of the Hull Sway Test, had the subject fill out the self-rating scale, and finished with the Ink-Blot Suggestion Test.

STATISTICAL TREATMENT

Analysis of variance was used since it showed whether any relationship found was due to S, E.B., or their interaction. Male and female subjects were found to differ significantly in their production of S, so it was necessary to control the sex of the subjects in the analyses of variance. Beck (7) now feels that percent of S is more meaningful than total number of S. He suggested to the author that nine percent or more S be considered as indicating a significant degree of oppositional tendencies. Subjects were divided into two groups, those having nine percent or more S and those having no S. Subjects having between one percent and 8.9 percent S were not used.

The two groups, those with no S and those with nine percent or more S, were divided into three parts on the basis of the E.B. An extratensive E.B. was defined as a ratio of sum C to sum C plus M of .60 or more, an introversive E.B. as a ratio of .40 or less, and an ambiequal E.B. as a ratio between .40 and .60. The six groups will be referred to respectively as SI (S and introversive E.B.) SE (S and extratensive E.B.) SA (S and ambiequal E.B.), OI (No S and introversive E.B.), OE (No S and extratensive E.B.), and OA (No S and ambiequal E.B.).

An attempt was made to control, at least partially, the Rorschach response totals of the subjects used in the analysis of variance. This was possible when there were more subjects than were needed in one of the groups. Subjects to be used in the analysis of variance were then chosen by selecting those subjects who had an R which would bring the average R of their group closest to that of the other groups.

RESULTS AND DISCUSSION

There was homogeneity of variance among the groups being analyzed (12). An attempt was made to control R very closely (the four average R's were 25.5, 24.0, 24.4 and 27.9) by using only seven subjects, all females, in a group and omitting the SA and OA groups from the analyses. This series of variance analyses will be referred to as the "first series." For results see Table III. The one significant result could easily have been due to chance.

A similar attempt to control R very closely (the four average R's were 20.7, 25.3, 27.0 and 24.0) was made by using only seven subjects, six females and one male, in each group, and omitting the SI and OI groups from the analyses. This series of variance analyses will be referred to as the "second series." For results

TABLE III. Results of Analyses of Variance†

Series	Source	(Quotients of F Ratios) Criterion Measures					
		"No" Answers	Instruc- tions	Blot Total	Blot Neg.	Blot Nonsug.	Blot Suggest.
First Series	EB	4.98*	#	#	#	#	#
	S	#	#	#	#	#	#
	S x EB	2.99	#	#	#	#	#
Second Series	EB	#	#	#	#	#	1.35
	S	#	#	#	#	#	1.08
	S x EB	4.95*	7.05*	1.27	1.18	#	1.12
Third Series	EB	#	#	#	1.53	#	1.03
	S	#	#	#	#	#	#
	S x EB	4.95*	1.47	3.71*	2.93	#	3.36*

† Results of Hull Sway Test, Self Ratings, and Opinion Questionnaire, are not given since all results were short of the .05 level of significance.

* Significant at the .05 level.

The error estimate is larger than the mean square being compared with it.

see Table III. There is about one chance in four the two significant F ratios are both due to chance.

Since the small number of subjects might have been responsible for the essentially negative results, a "third series" of variance analyses was calculated using all six groups (SE, SA, SI, OE, OA, OI). Only females could be used as there were no males in the OA group.

To maximize degrees of freedom the number of subjects per group was placed at the size of the group with the smallest number of women, thus putting eight subjects in each group. Although subjects were chosen for each group in such a way as to keep R as similar as possible from group to group, the average R's for the groups were rather discrepant (30.6, 22.1, 20.7, 21.6, 37.5 and 20.1). The only significant F tests, at the .05 level, were for "No" answers on the Opinion Questionnaire and for both the total and suggestibility scores on the Ink Blot Test and they were significant only for interaction. (See Table III.)

For each of these three scores two separate analyses were done, one for the three E.B. groups with nine percent or more S and one for the three groups with no S. When a significant between groups variance was found the individual groups involved were compared by means of "t" tests. In all three cases, for each E.B., a "t" test was used to compare the group with

nine percent or more S and that with no S.

In all cases, as can be seen in Table IV, the F tests for the three groups with nine percent or more S (SE, SA, SI) were significant at the .01 level and those for the three groups with no S (OE, OA, AI) did not reach significance. Among those with nine percent or more S, the SA group was most oppositional in all three cases. The SI group was the least oppositional as measured by both the total score and the suggestibility score of the Ink Blot Suggestion Test, while the SE group was the least oppositional as measured by the "No" answers. Results of comparisons between pairs of groups are also given in Table IV.

To determine whether results in the last series of variance analyses were due to variations in R, an analysis of variance was done for R, with E.B. and S as the two factors. The F's for E.B. and for interaction were not significant, that for S was significant at the .05 level. Since R is not significantly related to the interaction between E.B. and S, it appears unlikely that R was responsible for the significant F's for interaction on the "No" answers and the two scores of the Ink Blot Suggestion Test. Average R of those with nine percent or more S was 29.6, for those with OS, 21.3. This is probably an artifact since there is a better chance of not finding any S in a short record

TABLE IV. Breakdown of Significant Results on Third Series Analyses of Variance

(Average scores for each group, with accompanying F and t tests.)

Criterion		An. of Var.						
		Ext.	Amb.	Int.	F	E x A	E x I	A x I
"No" Ans.	S	25.1	32.1	30.6	6.468**	3.41**	2.68*	0.73
	OS	28.0	27.2	29.1	0.423			
	t	1.40	2.38*	0.73				
Blot Total	S	47.0	49.5	39.1	5.937**	0.80	2.51*	3.30**
	OS	48.6	45.1	46.9	0.746			
	t	0.51	1.39	2.47				
Blot Sug.	S	3.2	2.4	7.4	6.367**	0.58	2.74*	3.33**
	OS	2.6	4.1	3.6	0.517			
	t	0.41	1.16	2.49*				

** Significant at .01 level.

than in a long record, and the presence of even one S, no matter how long the record, removes the record from the no S group. There remained a possibility that oppositional subjects might give fewer R, but more S. Then the fact that the subjects with no S had fewer R, and those with nine percent or more S had more R might be cancelling out significant differences between the OS and the nine percent S subjects. To test this, analyses of variance, using three factors with EB, S, and R as the three factors, were performed on the "No" answers, and the two Ink Blot Suggestion Test scores. High R ranged from 23-51, low R from 16-19. Average R for the high R group was 30.0 for the low R group 17.3. It was possible to use only 24 subjects, which weakens the analyses, but results are still suggestive. For "No" answers, only R was significant at the five percent level. For the two Ink Blot Suggestion Test scores there were no significant scores. For all three analyses S was highly nonsignificant. R may be related to negativism, at least as shown by the "No" answers (the more "No" answers the fewer the R) but S is certainly not.

Results seem to imply that, for the population sample studied and the measure of oppositional tendencies used, a combination of an extratensive E.B. and the use of S is not indicative of oppositional tendencies.

White space, by itself, does not appear related to any of the samples of oppositional tendencies used in this study. This finding agrees with that of Fonda (15) on the group Rorschach, and is not inconsistent with the findings of Ingram (19). Ingram did find a low, but significant, correlation between S and people rated as aggressive in an interactive situation, but the relationship between opposition and aggressiveness is not clear cut. The findings of the present study, as they concern S, are in disagreement with the findings of Ban-

dura (3), who found a low but significant relationship between high school teachers' ratings of negativism and use of white space by their pupils. However, in addition to using a different system of scoring for S, and using sum S rather than percent S, a nonstandard form of Rorschach administration was used.

Chance factors probably account for the one instance where E.B. appears related to a sample of oppositional behavior, a finding in agreement with Fonda (15) and Bandura (3).

To some extent oppositional tendencies are related to the interaction between S and E.B. on two of the criterion measures. This finding is in disagreement with Bandura's conclusion (3) that E.B. did not effect the relationship between S and five behavior ratings, including negativism.

SUMMARY AND CONCLUSIONS

Six assumed measures of oppositional tendencies were given to 101 college students of both sexes, along with the individually administered Rorschach. The criterion measures were hypothesized to measure a variety of different types of opposition. Subjects were divided into separate groups on the basis of S percent and E.B. All groups were equalized in numbers, subjects being eliminated from groups when necessary on the basis of discrepant R on the Rorschach. Separate analyses of variance were done with S percent as one factor and E.B. as a second factor for each assumed measure of opposition. From one to four separate scores were subjected to analysis of variance for each criterion measure.

The following conclusions appear warranted: 1. S responses and outwardly directed oppositional tendencies, as measured by the six criterion measures used, are not related for the population sample tested. 2. Extratensive E.B. and outwardly di-

rected oppositional tendencies, as measured by the six criterion measures used, are not related for the population tested. 3. The use of S in an extratensive E.B. is not indicative of outwardly directed oppositional tendencies, as these are measured by six criterion measures, with the population tested. 4. Interaction between S and E.B. does appear related in two of the measures. The nature of this relationship varies differentially, both in relation to S and to E.B. The relationships were small, and do not warrant use in individual interpretations of Rorschach records.

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White Space on the Rorschach: Interpretation and Validity¹

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The white space (S) response was established as an important Rorschach variable in Rorschach's original experiment (33). Since that time many studies have touched on it. Recently several studies have made determined efforts to validate certain interpretations. All have suffered from failure to consider the great variety of interpretations which have been suggested, particularly those taking into account not only S but also one or more other responses. This review proposes to classify and enumerate the many varying interpretations of S, and to briefly consider studies which bear upon their validity.

Interpretation of S. Many interpretations have dealt with S *per se*, regardless either of other Rorschach factors or of the type of individual concerned. A large number of interpretations are concerned with different types of S. Often interpretations have considered the meaning of S when found in conjunction with other Rorschach scores. Finally many interpretations have been dependent upon the individual's diagnosis.

Interpretations of S *per se* will be considered first. The most popular is that it represents some form of opposition (3, 5, 17, 19, 21, 22, 28, 32, 33). A related concept is that it indicates some such quality as persistence, determination, stubbornness or obstinacy (3, 4, 6, 28, 31, 33).

It has been said to indicate flexibility and elasticity (8), a tendency to do different and unusual things

when confronted with a situation (17, 19, 23) or an infantile adaptability of vision (28). Piotrowski (31) suggests it may bespeak both changeability and decisiveness. The person with many S responses displays a feeling of self-confidence in his own strength and individuality, and makes his frequently incompatible resolutions with a feeling of certitude. Klopfer *et al* (21) relate the ability to use S to ego strength, saying it implies the ability to resist being overwhelmed by forces in the environment or by motivational confusion.

S has also been said to indicate opportunism (28), fluency (1), and in some cases an indication of certain cultural or sub-cultural factors (12). One author (29) feels that lack of S indicates passivity, suggesting he may view its presence as indicative of activity. Loosli-Usteri, as quoted by Kelley and Rieti (19) suggests the subject may be defending himself against repetition of interpretations, or that the subject does not want to interpret the black.

S in which there is a complete reversal of figure and ground is felt by Bochner and Halpern (8) to represent an oppositional quality because it is a reversal and because of its solidity. Phillips and Smith (30) speak of stubbornness, resistiveness, independence of thought, and ideal characters. When there is very much of this type of S, particularly in main locations, balanced perception of reality is hypothesized to suffer due to the emphasis on competitive and stubborn self-assertion, and on doing things differently (21). This type of S, and responses using only the edges of a white area, are said to be usually indicative of compulsive reactions or inhibitory ambivalences (22).

¹ This article is a condensation and modernization of an appendix to a dissertation submitted to the graduate school, Northwestern University, in partial fulfillment of the requirements for the degree of doctor of philosophy.

In percepts in which the lack of solidity of the blot is stressed, as in "a butterfly with holes in it," the S is thought to indicate the individual's feelings of insufficiency and insecurity (8, 35) or disrupted personal relations, and a feeling others are not to be trusted (30).

The "cave form" S where a dark figure encircles an S, as on card II, is said by Schachtel (35) to reveal a "need for shelter" or "fear of enclosure," depending on whether the encircling figure is seen as fortifying and defending or as oppressive and imprisoning. He feels that when this type of S response has a vista-quality it seems based on a feeling of insecurity and instability. S with vista is seen as indicating introspective tendencies when found in moderate degree, and self-consciousness based on negative attitudes towards the self when overemphasized (22).

S used additionally in a percept which is primarily a response to the blot is believed to indicate elasticity in the subject's mind, and the occasional ability to look at problems from an unusual angle (23). The tiny S is said to produce evidence of grumbling, spitefulness and petty rebelliousness (16).

When used primarily for its color value, its whiteness, S has been interpreted as representing an unconventional tendency if bright colors are also used, but a traumatic experience with resentment if they are not (22). A different interpretation is that it indicates intermittent conscious non-depressive moods and a fighting spirit which helps uncover usually overlooked aspects of reality (31). One pair of experts feel it reveals apathy and inability to act decisively if S is used as color and the percept is formless or of indeterminant form (30).

Phillips and Smith (30) indicate that when S is undifferentiated from the remainder of the blot, as in a "black and white butterfly" this is an index of pathology in adults, and is

associated with profound dullness and apathy. Deteriorated schizophrenia or occasionally an organic lesion is suggested.

When the S percept comes first it is said to characterize the natural approach of the subject, but if it is among the last responses on the card the subject is using every available stimulus for interpretation, displaying his thoroughness and ability (8).

Many authors interpret S differentially depending on the experience balance. When found in an ambiequal experience balance it is said to bespeak skepticism, doubt, hesitancy, vacillation and indecision as well as emotional ambivalence and ambitendencies (4, 16, 31, 33). A vacillation between outward and inward aggression, resulting in skepticism and in extreme cases nihilism, is hypothesized (8).

When S is found with an extratensive experience balance, almost all authors indicate that opposition is directed outwards towards the environment (4, 8, 9, 16, 23, 29, 31, 32, 33).

Variations on the theme of self directed opposition are suggested by S in conjunction with an introversive experience balance. Rorschach (33) spoke of opposition to the subject's own inner life, resulting in constant self distrust, feelings of insufficiency of every sort, self-criticism and circumstantiality. Others speak of oppositional tendencies directed towards the subject's own self and thinking (32), arguing with the self (31), internal resistance, a feeling of inferiority (9), autocriticism and self-doubt stemming from the self-aimed hostility and aggression of the individual (8), and overt self-will, along with opposition to one's own deep wishes (3). Gurvitz (16) feels that S in an introversive experience balance will probably result in intellectualized aggression such as sarcasm or caustic wit.

When S details are evenly distrib-

uted along with other types of small details it is said to indicate either rich artistic responsiveness or an intuitive sense for the unusual (23). Many rare details along with main S are thought to indicate doubt and opposition directed toward one's own thinking (32).

Lindner (24) states that white, when used in the chromatic cards, throws suspicion on the subject's psychological integrity, and that when only the white spaces are used on the colored cards a serious mental disturbance is indicated. Lindner lists specific responses for five given S areas and gives diagnostic interpretations for each response.

Some authors give interpretations specifically for certain diagnostic categories. Thus normal individuals who are very compliant and eager to be accepted indicate concealed opposition and independence by producing many S (10). Small quantities of S are said to show driving stubbornness, while in larger quantities it shows arbitrary, aggressive souls (16). In healthy, intelligent individuals it indicates a resolution and perseverance that achieves a well understood objective despite obstacles and disappointments, while in the less intelligent, partially educated individual it reveals contumacy and obstinacy that may result in destructive narrow-mindedness (3). Poor endowment is felt to preclude the occurrence of S (32).

In patients S may indicate a potential stormy therapeutic course with active negative transference (16).

Beck says S is consistently absent in depressed people, indicating their resignation to their troubles, while in the feeble-minded it suggests management difficulties (3).

In paranoids S is said to bespeak a vexingly unbending rigidity in sticking to twisted ideas (3, 4), or rigidity plus the tendency of the patient to actively force his view of reality upon the world (16).

It is low or absent in passive individuals, according to Beck, and in psychopathic personalities it issues directly in destructive behavior against society and may eventuate in delinquency (3). In schizophrenics S is said to indicate negativism (3, 16, 33), as well as blocking and eccentricity (33).

Studies of the validity of the white space response. Some studies indicate differences in S between clinical groups. Buhler *et al* (10) found that the groups giving the least S were nonpsychotic organics, social psychopaths and depressed neurotics, while normals gave by far the most S. In a later study (11) nonpsychotic organics, nonparanoid schizophrenics, depressed, and paranoid schizophrenics had the least S, while normals and sexual psychopaths had the most. This finding might be felt to contraindicate S as showing opposition since paranoids and schizophrenics are usually thought to be more oppositional than normals. However, the differences may be explainable in terms of uncontrolled differences in response totals (R), since S does vary with R.

In a study by Klebanoff (20) 26 male paretics had significantly more S than did normal males matched for age and education. Again R was uncontrolled. No interpretation was offered. Rapaport (32) found overideational preschizophrenics to have significantly more S than neurotics and normals and combined paranoid and unclassified schizophrenics. Since overideational schizophrenics average 50 R per record, while no other group averaged over 30 R, the differences in S are probably a function of the differences in R.

Billig and Sullivan (7) report that the poorer the prognosis, based on past performance, of alcoholics, the more S they produced, and suggested the S indicated aggressivity, and aggressive alcoholics were harder to cure.

Goldfarb (15) found twenty adolescents diagnosed obsessional had significantly more S in their records than twenty unselected adolescents. The excess of S percepts by the obsessionals may have been a function of their need to uncover all possible responses, and of their higher R.

Suares (36) concluded that adolescent girls saw more S than adolescent boys, but felt this probably did not indicate opposition in her girls since one-third of the boys were clinic boys known to be in strong revolt against their milieu. Again uncontrolled R may have been a factor.

In a pre- and post-therapy study, utilizing only main S, Lipton (26) found a decrease of S after insulin coma treatment in seventeen schizophrenic patients. Although S was cut in half after therapy this may have been due to the reduction in productivity which also took place. The total number of S was very small to begin with.

Counts and Mensh (13) administered the Rorschach to eight subjects under normal conditions, and then again after the subject had been hypnotized and given suggestions to produce an artificial conflict, a third time after rehypnotization and removal of the conflict, and a final time by a different examiner under normal conditions. The mean per cent of S increased by fifty per cent from the first to second administration but remained unchanged thereafter, which was interpreted as indicating that the change in hostility level noted in psychiatric interview material was not reflected in the S response.

Three factor analytic studies contribute something to our knowledge of S responses. Adcock (1) studied 88 Cook Island and 30 New Zealand children, and found S to fit into a factor with low P per cent, low A per cent, low W and high R. He felt this to be a fluency factor.

In a study of 92 Yale undergraduates by Wittenborn (37) S was shown

to correlate .61 with a factor high in D, d, Dd, M, FM, F, Fc, C', FC, and O. He felt this factor indicated productivity. In a second study (38) of 160 out-patients and in-patients of a psychiatric hospital there was a factor comprised primarily of S and original responses. Such responses were said to be characteristic of seriously disturbed people, particularly when the form level of the responses was inferior or when content was implausible or confused.

Two studies directed specifically at S utilize personality questionnaires as the criterion. Fonda (14) administered the Guilford-Martin Personnel Inventory, Inventory of Factors GAMIN, the standard group Rorschach and Harrower's parallel series to 150 college undergraduates.

Using a standard S score which took R on the Rorschach into account, he found a significant correlation between S and the "?" score from the questionnaires for subjects with an extratensive experience balance, for subjects with an introversive experience balance, and for all three experience balances combined. No significant correlations were found for the total group or for any of the three experience balances between standard S score and scores on factors meant to measure agreeableness, cooperativeness and inferiority. No significant correlations were found between S and "?" for subjects with an ambiequal experience balance. S in an ambiequal experience balance is supposed to indicate indecisiveness, and the use of the "?" choice on the questionnaires might be similarly interpreted. Therefore these results suggest S in an ambiequal experience balance may not be related to indecisiveness. Partial corroboration of Rorschach's hypothesis is indicated however if excessive use of "?" is considered indicative of contrariness. Generalization of results is unwarranted due to use of the group Rorschach.

Rosen (34), using only main S found no significant relationship between S and MMPI scores on the paranoid, psychasthenic, depressive and psychopathic deviate scales. By excluding 22 psychopathic subjects from his sample he did find a significant relationship between S and the psychopathic deviate scale.

Linn (25) showed that more soldiers rated superior had S than soldiers rated above average, average or inferior. There is little evidence for Linn's suggestion that this is because those who keep hostility covert become the best soldiers and the unexpressed hostility comes out in S.

In a study aimed at finding Rorschach differences due to different methods of administration Lord (27) gave neutral, emotionally positive and emotionally negative administrations of the Rorschach to 36 college students. Negative administration yielded more S than neutral, in line with her hypothesis of increased negative behavior as the response to an emotionally negative administration. The most S of all was found with emotionally positive administration, which is not in line with the hypothesis. Also R varied with administration in the same way S did. Perhaps increased R indicated increased rapport, and increased S reflected increased R.

Ingram (18) compared eight Negro college students producing two or more main S with eight who produced none. All subjects were rated on behavior during a frustrating pyramid puzzle problem and an intensely frustrating interview. People high on S were concluded to be more aggressive in a participatory, interactive way (interview situation) than people with low S. In the puzzle situation, with social interaction minimized, there was no difference. R was uncontrolled.

Bandura (2) gave the Rorschach to 81 high school students, and used teachers' ratings of negativism, assert-

iveness, self-distrust and inadequacy feelings as the independent criteria of oppositional tendencies. Subjects were required to look at each card for four minutes, which may have differentially affected production of S from subject to subject. Thirty-two subjects with an extratensive experience balance and 28 subjects with an introversive experience balance were used in the final analysis. In no case was there a significant difference from one experience balance to the other. Since R and S were closely related, partial correlations were used to find the relation of S to the personality variables with R held constant. Partial correlations between S and assertiveness, inadequacy, and self distrust were all nonsignificant. A partial correlation of .27 (significant at the two per cent level) was found between S and negativism.

A major criticism of all studies but the last is that R is not controlled, and may have been responsible for any findings. Several studies are hurt by their use of group Rorschach and nonstandard administrations of the Rorschach, since this greatly weakens any generalization of the Rorschach as used in standard clinical practice. Questionnaires and rating scales are perhaps somewhat unreliable and weak as criterion measures. None of the studies yields results which would indicate that S can be safely used in the interpretation of the individual record. On the other hand the weaknesses indicated above suggest that none of the studies can be considered in any way definitive. There are relatively few studies, and they touch on a bare minimum of the many suggested interpretations of S.

Summary: The many varied interpretations of S have been reviewed both as they apply to S *per se*, and as they apply to different types of S, as they apply to different diagnostic categories, and as they relate to S in conjunction with other Rorschach

variables. Studies bearing on the validity of these interpretations have been reviewed, insofar as there are such studies. It was concluded that all present studies have weaknesses which prevent their being definitive, and that while no studies to date suggest that any of the interpretations are sufficiently valid insofar as the individual Rorschach record is concerned, the weaknesses in present studies prevent this judgment from being final. Very few of the many suggested interpretations have yet been tested.

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The Rorschach as an Index of Pathological Thinking ¹

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The concept of pathological thinking is used widely in the clinical evaluation of mental patients. Yet it is a poorly defined concept for it has a multitude of theoretical referents and has largely evaded efforts at successful quantification. In this study the Rorschach is used as a basis for a theoretical formulation of pathological thinking and as an index for its quantification. The Index was devised by Watkins and Stauffacher (15) and cross-validated by Powers and Hamlin (11). In the present study its reliability is re-examined and its validity investigated on the basis of criteria that are different from those used until now.

Within the context of this study, and perhaps more generally too, pathology of thought is assumed to come to its clearest focus in schizophrenia. Bleuler's (3) discussion of the associative disturbance in schizophrenia is well known. According to him, social relevance and logic as determinants of thought associations give way to accidental contiguity, clang similarity, condensation, and stereotypy. Also within the realm of associative disturbance are Cameron's (9, pp. 50-64) formulations regarding *asyndetic thinking* and *interpenetration of themes*. Other authors have stressed the schizophrenic's loss of conceptual thinking, his concreteness. Thus Goldstein (9, pp. 17-40) sees the schizophrenic's thinking as similar to that of the organic patient, with words becoming denotative rather than connotative. He also demonstrates an impairment of the capacity to sort objects into conceptual categories. Both Kasanin (9, pp. 1-4) and Benjamin (9, pp. 65-90) have different operational approaches to the same

problem, but their conclusions are similar to Goldstein's. On the other hand, Von Domarus (9, pp. 104-114) and Arieti (1) stress the schizophrenic's modification of accepted logical thought.

The psychoanalytic term, *primary process*, refers to many of the same formal thought characteristics found in schizophrenic thinking, such as *condensation*, *displacement*, and *symbolization* (4). However, it is given a more general significance than the concept of pathological thinking, for it manifests itself in the dream worlds of normals (4) and in such ubiquitous phenomena as slips of the tongue, humor, and the effects of fatigue. Rapaport (12) characterizes the *primary process* as the drive organization of memories and thoughts, with the complete interchangeability of drive representations resulting in the phenomena of *condensation*, *displacement* and *symbolization*. By contrast, the *secondary process* is guided by reality connections and the accepted laws of logic. The structural precondition for the secondary process is an ego with the capacity to delay the immediate, direct discharge of drives. Recently Holt (7) has emphasized the error in assuming that *primary* and *secondary processes* constitute a dichotomy. "In much of what Freud wrote about these concepts, it is fairly clear that he did not think of them dichotomously, but as defining the extremes of a logical continuum. Any actual thought process, even that of a baby or a deteriorated schizophrenic, has to be located somewhere in between the poles" (7, p. 15).

The continuum idea is essential in the current efforts to develop an index of pathological thinking. It implies that pathological thinking is neither totally present nor totally absent, but

¹ Thanks are due Dr. Lester M. Libo for help in developing the manual used in this study.

present to some quantifiable degree. If this is so, such an index should make it possible to discriminate significantly between different diagnostic groups representative of varying degrees of thought pathology and to measure clinical improvement or regression in patients.

The Rorschach has been routinely used for making judgments about the mental status of patients with particular reference to the degree of irrationality of thought and distortion of perception. The usual measure of this is the form level, whether it be estimated as an $F + \%$ (2, 6) or rated on the Klopfer Form Level scale (10). From a theoretical point of view the form level concept has always been a troublesome one because of its discontinuity with general clinical and experimental formulations regarding thought pathology (13, pp. 228-252).

In a recent study, Friedman (5) has attempted to establish referents for the form level concept in perceptual developmental theory. He accepts Werner's (16) definition of regression as a partial return to genetically lower levels within the individual, in which there is less differentiation and hierarchic integration of function than at higher ones. Friedman postulates that the Rorschach reflects "certain aspects of perceptual functioning in schizophrenic patients which suggest that regression has taken place" (5, p. 171). He compared schizophrenics with normal children and normal adults. His more general finding is that "on the whole, the results would suggest that the perceptual functioning of the schizophrenic, in its structural aspects, is intimately related to that of the child . . . From the point of view adopted in this study, its characteristics may be understood as those of a primitive globality, syncretism, lability, diffuseness, and rigidity" (5, p. 184). These phenomena may be subsumed under Werner's

formulations regarding impairment in the capacity for differentiation and hierarchic integration. Friedman emphasized that regression does not return the schizophrenic to precisely the same level as the child occupies, for the adult psychotic still manifests many of the qualities of perceptual functioning that characterized him before regression occurred.

A question may be raised about the adequacy of describing the processes involved in responding to the Rorschach, in perceptual terms alone. Although Friedman intended to stay as close to the "purely structural aspects of perceptual functioning as possible" (5), he could not avoid bringing in certain associative categories as well, such as the *fabulized combination* and the *contaminated response*.

This difficulty in distinguishing between "the purely structural aspects of perception" on the Rorschach and the associative ones would appear to justify Rapaport's (12) use of the perceptual-associative interplay construct. Normal subjects are able to utilize this interplay in order to observe "reality" as it is implied in the test instructions. They ". . . will understand the testing situation and the test instructions to mean that they are to give responses for which sufficient justification may be found in the perceptual qualities on the inkblot; that they must give responses that are completely acceptable to everyday conventional logic; and that, just as they should not give responses which they cannot confirm by reference to the inkblot, so they should not give responses which are so dominated by the perceptual configuration of the inkblot that they are no longer subject to critical control, and thus become absurdly combined or absurdly integrated" (12, p. 236).

Responses that disregard the perceptual qualities of the inkblot represent an *abnormal increase of dis-*

tance from the blots; those that are so stimulus bound as to disregard ordinary logic and plausibility represent an *abnormal loss of distance*. A deviant verbalization on the Rorschach is one that represents an abnormal increase or loss of distance from the blot.

Using Rapaport's categories of deviant verbalizations on the Rorschach, Watkins and Stauffacher (15) developed an "Index of Pathological Thinking". From Rapaport these two authors selected the fifteen categories of verbalization most markedly deviant or most frequent in occurrence. To these, tentative weights were assigned, representing the authors' judgments regarding the degree and significance of pathology. For each Rorschach protocol studied, an average weighted score was calculated. The study by Watkins and Stauffacher (15) and a later one by Powers and Hamlin (11) are in essential agreement regarding the reliability and validity of the Index of Pathological Thinking. In the first study two independent raters obtained the reliability coefficients of .043, .469, and .913 for a normal, neurotic, and psychotic group respectively. Scoring reliability for the three groups combined was .775. In the second study two raters independently scored fifteen protocols selected at random from a total sample of fifty, and obtained an r of .88. In both studies the criterion of validity was the differences in mean scores for various diagnostic groups. Watkins and Stauffacher found significant differences between the means of the normal, neurotic and psychotic groups in the expected direction. Powers and Hamlin arranged five groups in the following assumed order of increasing pathology of thought: normal, anxiety neurotic, pre-schizophrenic, paranoid schizophrenic, and catatonic schizophrenic. An F ratio significantly below the .01 level was obtained, with the scores

increasing as expected.

Problem: In the present study, the validity of the Index for measuring intra-individual changes in three separate groups of schizophrenics, over a three-month period is investigated. Its reliability is also re-examined.

METHOD

Since the original scale devised by Watkins and Stauffacher was used with only minor modifications, it will not be reproduced here. The modified scale of this study permitted a five-point rating for each response with the following values in the order of increasing pathology: .00, .25, .50, .75, and 1.00. In order to increase the reliability of scoring, a manual was developed with more detailed scoring instructions than those presented by Watkins and Stauffacher and including extensive lists of sample responses taken largely from Rapaport (12, pp. 473-491).

According to the general design of this study, changes in Index scores over a three-month period were correlated with psychiatric ratings of clinical change. Three groups of schizophrenic subjects were used. Since the basic data analyses were carried out separately for the three groups, there was actually a sequence of three studies. Comparability of the groups is therefore not a requirement. However, Table I indicates that the three groups are similar with respect to age. Table I presents the composition of each group and the treatment applied.

TABLE I. Subjects of Study

Treatment	Sex			Age	Rng. Mean
	N	M	F		
Insulin Coma	15		15	22-43	31
ECT	14	5	9	23-51	34
Routine Hospital Care	12	5	7	18-55	33

The only selective factor operating in the choice of subjects was the capacity to give at least ten responses to the Rorschach. Pre-treatment pro-

protocols were obtained from patients within a few days after admission to the hospital, and never more than a week before the beginning of Insulin therapy and ECT. Post treatment protocols were obtained approximately three months after the first ones; this was approximately two weeks after the termination of treatment. For the Insulin group only, psychiatric ratings of clinical status were obtained immediately before treatment and both two weeks and six months after its termination. For all three groups psychiatric ratings of clinical change over the three-month period were made. These psychiatric ratings were used as the basic validity criteria.

RESULTS

Reliability

Both the reliability of scoring and the split-half reliability of the Index were determined using only Insulin group protocols. The scoring reliability was estimated by two methods, the first based on the percentage of agreement between two raters of each separate response, the second based on the rank order correlation between the total scores of all the protocols ($N = 38$). The additional 8 Rorschach records were obtained by repeat testing of 8 patients six months after termination of Insulin therapy. In order to guard against the "halo" effect that might result when responses are scored within the context of the entire protocol, each response was typed on a separate card and given a code number. The 1142 such cards were thoroughly shuffled before being scored by two raters working independently. The percentages of agreement between the raters on the sixteen different categories of the Index were very small, indicating low scoring reliability for the individual categories. The scoring reliability of deviation values, however, was quite satisfactory, as shown in Table II, which presents the number of re-

TABLE II. Disagreement Between Two Raters in Scoring Separate Rorschach Responses.

Difference Between Index Values	Number of Responses	Percent
.00	747	65
.25	305	27
.50	47	4
.75	32	3
1.00	11	1
Total Number of Responses		1142
		100

sponses on which the two raters' scoring differed by a given Index value. A method of determining reliability by an analysis of variance (8), when performed on these data, yielded a reliability coefficient of .80.

The second determination of scoring reliability was based on the total scores of 38 protocols. Since total scores (i.e. the sum of the deviation values) are positively correlated with the number of responses in the protocol, the number of responses was partialled out. The resulting partial rank order correlation between the two raters gave a reliability coefficient of .85. The Index itself (sum of deviation values $\times 100/\text{number of responses}$) is independent of the number of responses; the correlation between the Index and the number of responses was not significantly greater than zero.

It should be noted that the obtained reliability coefficients of .80 and .85 are not significantly different, though the first is a measure of the reliability of scoring individual responses and the second is the reliability of the total Index score for the entire protocol. Thus it is evident that the comparatively high scoring reliability of the Index represents high inter-rater agreement on each separate response and is not an artifact of the "halo" effect that would result from scoring responses under a global impression of the whole protocol.

The Index would seem to lend itself more justifiably to a determination of split-half reliability than do most other Rorschach scores, since there is a less direct relationship between the kinds of variables scored in the Index and the stimulus properties of the inkblots than is the case with formal factors such as FC, FK, Fc, etc. In order to overcome to some degree the well-known objections to splitting the Rorschach on the basis of the cards, which has been the most usual procedure in other studies, the Index scores were split by taking every other response throughout each protocol. The rank order correlation between the two halves, after correction by the Spearman-Brown formula, gave a split-half reliability coefficient of .52.

Thus, scoring reliability in terms of scale values is high. However, in terms of agreement on individual categories, it is unsatisfactory. Split-half reliability is significant but mediocre in level.

Validity

The validity of the Index for discriminating between groups that represent varying degrees of pathological thinking has been reported previously (11, 15). In the present study the capacity of the Index to reflect clinically observable intra-individual changes is the main consideration. Actually two basic validity tests have been used: (a) the correlation between the psychiatric rating of clinical status and Index scores, and (b) the correlation between the psychiatric rating of clinical change and change in Index scores.

The first validity test was carried out with the Insulin group only. The psychiatrist in charge of the Insulin unit rated the clinical status of each patient on a five-point scale immediately before the beginning of Insulin therapy, two weeks after its termination (approximately three months after the first rating), and six months after its termination. These three ratings are designated as Pre-Insulin, Post Insulin I, and Post Insulin II in Table III. Both the Index scores and psychiatric ratings were dichotomized at the median and correlations were computed by Chi-Square based on four-fold tables. There are no significant Chi-Squares in Table III.

The second validity test was based on the three groups of subjects. Since there were three sets of psychiatric ratings of clinical status for the Insulin group, three ratings of change were made. For both the ECT and Routine Hospital Care groups there was only one psychiatric rating of change. Although the psychiatrists used five-point scales, these ratings were dichotomized into Improved and Unimproved for Chi Square computations. Index changes were similarly dichotomized. In order to achieve this dichotomization with Index scores they were first normalized and converted into standard scores with a mean of 50 and a SD of 10. All patients registering a drop on this Index of at least one Standard Error of Measurement in standard score terms were classified as Improved; all others were classified as Unimproved. There are no significant Chi-Squares in Table IV.

In addition to the two basic val-

TABLE III. Chi Squares* for Relationship Between Psychiatric Ratings and Index of Pathological Thinking Scores for the Insulin Group.

Index** Scores	N	Psychiatric Ratings***		
		Pre Insulin	Post Insulin I	Post Insulin II
Pre Insulin	15	.05	.58	1.73
Post Insulin I	15	.05	3.23	.71

* Four-fold tables were used in computing X^2 and Yates' correction applied.

** Dichotomized at the median.

*** Psychiatric Ratings on a five-point scale were dichotomized at the median.

TABLE IV. Chi Squares* for Relationship Between Change in Psychiatric Ratings and Change in Index of Pathological Thinking for Insulin, ECT, and Routine Hospital Care Groups.

Change in Index Scores		Psychiatric Rating of Improvement**		
Pre to Post ***	N	Pre to Post I	Pre to Post II	Post I to Post II
Insulin group	15	.08	.05	.04
ECT group	14	.00		
RHC group	12	.04		

* Four fold tables were used in computing X^2 and Yates' correction applied.

** Dichotomized into *Improved* and *Unimproved*.

*** Dichotomized into *Improved* and *Unimproved*. The criterion of improvement was a decrease of one Standard Error of Measurement (3.4 standard score units). Standard scores were based on normalized Index scores with a mean of 50 and a SD of 10.

TABLE V. Rank Order Correlations Between $F+%$ * and Index Scores

Group	N	Rho.	
		Pre	Post
Insulin	15	-.42	-.38
ECT	14	-.623**	-.553**
RHC	12	+.002	-.42
Combined	41	-.40***	-.46***

* $F+%$ scored according to Beck (2). Both $F+%$ and Index Scores ranked from highest to lowest.

** $P < .05$

*** $P < .01$

TABLE VI. Pre and Post Index Scores for the Insulin, ECT, and Routine Hospital Care Groups

Group	N	Pre		Post		Diff.*	t
		Mean	SD	Mean	SD		
Insulin	15	17.65	12.75	15.65	11.35	2.00	.98
ECT	14	23.76	12.75	18.77	13.66	4.99	1.06
RHC	12	19.65	12.63	10.63	7.96	9.02	2.15**
Combined Groups	41	20.32	12.98	15.27	11.80	5.05	2.77***

* For the calculation of differences and their t -tests the Index scores were converted to normalized T scores with a mean of 50 and a SD of 10.

** $P < .10$

*** $P < .01$

idity tests, two other analyses were made that have some relevance to validity considerations. In Table V the rank order correlations between the Index scores and $F+%$ for the Pre and Post Rorschach records of the three groups are presented. Since it is assumed that a high $F+%$ would indicate a low level of pathology, negative correlations would be expected. All but one of the correlations are, in fact, negative. When the groups are taken singly, only the correlations for the ECT group are significant. With the groups combined, both correlations are significant.

Other findings with some relevance for validity are presented in Table VI. The mean Index scores for the three groups drop after the three month period of hospitalization. When the groups are considered singly, only the Routine Hospital Care patients register a drop that approaches significance. With the groups combined, a highly significant drop appears.

The data in Table VI may be compared with the means and standard deviations for schizophrenic patients obtained in the previous studies. Thus, Watkins and Stauffacher (15) obtained a mean of 18.15 and a SD

of 21.23 for their psychotic group. Their mean is rather close to the Pre mean in the present study. However, their variability is much greater. Powers and Hamlin (11) obtained mean scores for their pre-schizophrenic, paranoid schizophrenic, and catatonic schizophrenic groups of 20.53, 21.00, and 33.50 respectively. It is apparent that these means are higher than those obtained both by Watkins & Stauffacher and by the present authors.

DISCUSSION

While the two previous studies (11, 15) demonstrated the validity of the Index in discriminating between normal, neurotic, and psychotic groups, the present study fails to demonstrate the validity of the Index in measuring changes within schizophrenic subjects over a period of time. It may be said that the Index is a sufficiently fine measure to distinguish between groups but too gross to reflect intra-individual changes. However, this conclusion should be considered in the light of the known low reliability of psychiatric ratings (14). Certainly the significant drop in level of pathological thinking, as measured by the scale over a three month period of hospitalization, accords with expectation. It presents some hope for more positive results with better validity criteria.

Meanwhile, much can be done to sharpen the scale and perhaps increase its sensitivity. High reliability of scoring has been demonstrated for the scale as a global measure of pathological thought. Agreement is considerably lower for specific categories. Due to the infrequency of occurrence, some categories might well be dropped. The result would be a simplification of the scale with little loss in comprehensiveness. A few of the categories in which agreement was particularly low were found to overlap with others. In such cases categories could be combined, resulting in further simplification of the scale.

* During the course of eliminating and combining these categories, a sharpening of scale definition could be undertaken. There might be a further increase in the accuracy of the scale if all the categories with the same weights were grouped together. Such a re-arrangement is suggested by the high level of agreement between raters for degree of pathology, in spite of disagreement for specific categories.

Powers² is following a different course in his revision of the Index. He abstracted ten categories from Rapaport's formulations regarding deviant verbalizations on the Rorschach. These he later combined into four classes, which he designated intellectual disorganization, socially deviant content, inappropriate increase or loss of distance, and affective response. All categories were set up as continua, ranging from a value of 10 to a value of 50 in 5 point intervals. In this manner Powers has eliminated the arbitrary weighting of different categories. Empirical investigation rather than initial assumption then becomes the means of determining the degree of pathology represented by each category and class. The authors of the present study are reluctant to follow this course for two reasons: The first is the high reliability obtained by using the present five-point scale weights and the second is the very low reliability obtained for the separate categories.

Holt's (7) work on developing a primary process index based on the Rorschach is also relevant here. Holt's index is not geared to detect pathological thinking per se, but rather all manifestations of the primary process. It is therefore much broader in scope than the Index of Pathological Thinking, encompassing an "index of drive-directedness of thought", a measure of the formal thought characteristics of the pri-

² Personal communication.

mary process, as well as an evaluation of "the subject's attitude toward the test and toward his own productions, and the extent to which he is master of or is mastered by the primary process elements in his thinking" (7, p. 22). The third section of Holt's index has many elements in it which may well be incorporated in the present scale. For instance, a response that appears pathological may actually be quite benign if it is given in an aesthetic, anthropological, fairy-tale, intellectual, or humorous context. Frequently an apparently bizarre response may be given as a play of fantasy enjoyed by the subject. Considerations such as these must in some way be integrated into the scoring of the Index in order that truly pathological responses may be distinguished from those that are only apparently so.

The moderate but significant correlations between the Index and $F+\%$ accords with theoretical expectation. Although the $F+\%$ is not a pure measure of the structural aspects of perception, it probably encompasses relatively more of perception and less of association in the perceptual-associative interplay than most of the categories of verbal response described in the Index. Powers has incorporated $F+\%$ into his scale and it may well prove advantageous to incorporate it in the present one.

SUMMARY

Two recent studies (11, 15) have shown that an Index of Pathological Thinking on the Rorschach, based on Rapaport's classification of aberrant verbalizations, discriminates between psychotic, neurotic, and normal groups. The present study re-examines the reliability of the Index and investigates its validity against the criterion of observed clinical changes in schizophrenic patients.

The subjects were three groups of schizophrenic patients receiving different forms of treatment: Insulin Coma, Electro-Convulsive Therapy,

and Routine Hospital Care. The Rorschach was administered to all Ss shortly after hospital admission. Insulin Coma and ECT were begun a few days later and terminated after about three months. Rorschachs were repeated two weeks after the termination of treatment. In the non-treatment group the Rorschach was repeated three months after its first administration. The psychiatrist working with the Ss assigned ratings of clinical status before treatment as well as change in status (improved-unimproved) after treatment (or after routine hospital care).

The scoring reliability of the Index as a whole was satisfactory (.85). The split-half reliability (odd vs. even numbered responses in sequence throughout the protocol) was .52.

No significant relationships were found between Index scores and psychiatric ratings of clinical status or between change in Index scores and psychiatric ratings of change. However, the combined groups showed a significant ($p < .01$) average decrease in pathological thinking as measured by the Index over the three month interval covered by the study.

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Sources of Variance in Students' Rorschach Interpretations

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Recent reviews (1) (3) (6) of Rorschach experimentation strongly emphasize that one major gap in our knowledge about this widely used and often investigated test concerns the source of "information" that enters into an interpretation of the test. Is it the formally scored dimensions of the test? The unscored protocol? Observations of the subject apart from the protocol itself? Additional information about the subject, such as case history records? The imagination and projections of the clinician? "Pure chance" variations in the clinician's vocabulary usage? All of these variables, of course, probably have some influence, but the crucial question is, *how much* influence does each of these and other possible factors have.

Ideally, for maximal independence and objectivity, every interpretation should be dictated solely by the test situation, and preferably, for later review and blind analysis, by the test protocol alone. Such, realistically, can not always be the case; and it would seem highly desirable to know what factors have how much influence on Rorschach interpretations.

The present study is an assessment of kinds and degrees of influence on blind interpretations made by students in a beginning course on the Rorschach.

DESIGN OF EXPERIMENT

Specifically the present study attempts to assess what influence the following variables have on Rorschach interpretations concerning a selected variety of human behavior: (1) Rorschach protocol content, (2) individual student differences; and (3) didactic instruction on the use of the Rorschach.

Items of behavior. It was desired that the kinds of behavior about which interpretations were to be made be the same for all interpretations, be applicable to both clinic cases and non-clinic cases, be non-Rorschachese (so that the interpretations might possibly reflect more than rote learning or mechanical substitution of words for scores), be amenable to statistical treatment, and be representative of a fairly wide range of human behavior that might reasonably be assessed by the Rorschach. For this purpose, a 108-item Q-sort¹ roughly representing Murray's needpress variables (4) was chosen. These variables were felt to meet the above criteria satisfactorily. By requiring interpretations to be made in the form of the Q-sort distribution, it was possible to insure good variability of response and to simplify considerably the problem of statistical treatment. The Q-sort distribution also made possible certain additional analyses that are not dealt with in the present study.

Rorschach protocols. The protocols to be evaluated were two dittoed verbatim typescripts with no identifying information except that the subjects were adult males. During the study no additional information was supplied about the subjects. They were in fact two non-patient industrial employees tested for research purposes. Neither was considered particularly maladjusted either by himself or by his immediate associates. The sole criterion of selection, in addition to

¹ A detailed description of this Q-sort, together with a list of the items, appears in the author's doctoral dissertation (5). Many of the items were borrowed from a set prepared by Morris Stein and George Stern. A sample statement: "I finish most everything I start."

the availability of the protocols, was that one subject was rated high in work efficiency and the other was rated low. Clinically, both protocols contained evidence of some maladjustment, as might be expected.

Students. The students were the author's beginning class in Rorschach technique. The total class consisted of twelve students, two of whom could not be included in the study because of failure to complete the assigned task. The remaining ten constitute the student population used.

Instruction. The instruction consisted of approximately two months of lecture, discussion, and fieldwork experience on interpretation of the Rorschach. It was the standard introductory course in the use of the Rorschach.

Two parallel studies were run. For the study of *clinical* evaluations, the students were asked to make Q-sort clinical descriptions of the subjects. For the *self* view evaluations, the students were asked to postdict the self-concept Q-sorts of the subjects. These data were treated in separate parallel analyses and, as will be seen, yielded highly similar results. Unless otherwise indicated, all remarks to follow apply equally to either of these two parallel parts of the study.

Each student prepared two descriptive Q-sorts and two self-concept Q-sorts for each of the two subjects. One sort of each type was completed prior to the beginning of instruction. The remaining ones were prepared after two months of instruction had been completed. The students were asked not to discuss the cases among themselves and not to collaborate in evaluating them. Prior to completion of the study, they were not given any feedback about their results or about the specific cases. For both the pre- and post-instruction evaluations, they were allowed to use whatever information and help they could obtain from textbooks and the literature.

The data were evaluated by means

of a four-way analysis of variance with one entry per cell. The primary dimensions of the analysis were (1) Q-items, (2) students, (3) protocols and (4) series — i.e., pre- or post-instruction. These and all possible interactions are shown in Table I, along with the results of the study. The dependent variable being assessed is the score assigned by a student to a Q-item description of behavior, after exposing himself to a Rorschach protocol and to varying amounts of information about the Rorschach. For each of the two parallel aspects of the study, there were 4320 assessments of this dependent variable, independent except for the forced-distribution characteristics of the Q-sort and, of course, the stratified nature of the variance design. The primary effect of the forced Q-distribution is to make impossible the independent assessment of three of the four primary effects and of any interaction not involving Q-items as one dimension, there inevitably being zero variance among any set of means derived by summing across items, since the means of all the Q-sorts are identical. This is a pseudoloss that is of no consequence for the present study, the relevant information being contained in the effects that are assessable. A secondary, but potentially more serious effect of the forced distribution, is to introduce a slight negative average intercorrelation between Q-items, thereby violating the variance analysis assumption of complete independence of sampling. Although serious if small numbers of items are involved, this is assumed to have negligible effect with a 108-item sample.

In addition to the significance of the various effects, the contribution of each significant effect to total variance of the raw score is also determined, following Haggard's discussion of variance designs for random models (2). The reasoning involved is as follows: The raw score variance, σ_x^2 ,

of the dependent variable in a variance design is the sum of incremental contributions ($\Delta\sigma_x^2$ in Table I) of the independent sources of variance in the stratified design. For example, in a simple design involving m items per cell and k cells, independent sources of variance would be the error variance, σ_e^2 , and the variance contributed by the dimension that determined the classification of the data into cells, σ_d^2 . Raw score variance, σ_x^2 , would then equal $\sigma_e^2 + \sigma_d^2$. Approximations of these variances can be obtained from the estimates of variance, S_w^2 and S_b^2 , used for the variance analysis. S_w^2 is a direct estimate of σ_e^2 . Similarly, S_b^2 , computed from the variance of the cell means, is an estimate of $\sigma_e^2 + m\sigma_d^2$. Solving these approximate equations, an approximation of σ_d^2 can be obtained: $\sigma_d^2 \approx \frac{S_b^2 - S_w^2}{m}$. Similarly, $\sigma_x^2 \approx S_w^2 +$

$\frac{S_b^2 - S_w^2}{m}$. The solution can be generalized to determine the increments of the probable raw score variance contributed by each effect of variance analysis designs of almost any complexity.

Results and Discussion. The results of the analyses are summarized in Table I. Of the seven sources of variance, three are found to be significant at beyond the .001 level for both the clinical evaluations and the self view postdictions. One additional effect is found to be significant at the .05 level for the self view. The other effects do not approach acceptable significance levels.

The three clearly significant sources of variance are (1) the differential influence on item scores of the protocols themselves, (2) individual students' idiosyncratic interpretations of the protocols, and (3) the differential influence of instruction on interpretation of individual protocols.

All of these sources of variances are, appropriately, related to the pro-

ocols themselves. They indicate that even beginning students of the test are significantly influenced by the contents of the protocols.

The item-by-student-by-protocol interaction indicates that there are individual differences in interpretation of the protocols and suggests the range of individual skill or idiosyncrasy involved in the interpretations.

The item-by-protocol-by-series interaction suggests that instruction significantly influences the interpretations of protocols. Two major reservations regarding this evaluation should be made, however. The first is that no control group was used to determine the effect of mere repetition of the task, so that the significant interaction possibly could be due to repetition alone, with the didactic material being a total-waste except as interposed material to fill time between trials one and two. This consideration is made less important, however, by the second reservation, which has to do with the amount rather than significance of this variance. Although highly significant, this interaction contributes only three to four percent of the probable raw score variance, as shown in the last columns of Table I. If this contribution to variance can in fact be attributed solely to instruction and clinical experience rather than partially or wholly to task repetition, it is still of such low magnitude that one wonders whether there is sufficient value in a formal course on interpretation to justify its existence. These results do not of course pertain to the advisability of formally teaching the techniques of administration and scoring of the test. Nor can they necessarily be generalized to other instructors' methods of handling such a course, although all of the students involved were receiving multiple Rorschach instruction, from field work supervisors and from clinic staff as well as from the classroom instructor, during the training interval, so that at least

in this case the collective effect of several methods of instruction was discouragingly small.

That the test could be used meaningfully even without formal instruction in evaluation is suggested by the fact that from 20 to 23 per cent (see Table I) of the probable raw score variance in the interpretations of these beginners is attributable to the protocols themselves, quite apart from any influence of instruction beyond that contained in textbooks and such materials. (It should perhaps be pointed out that the question of whether the interpretations are valid or not, i.e. their "correctness", is not being considered in the present study, which is concerned exclusively with the sources of variance whether or not such variance contributes to valid interpretations.)

Individual differences in interpretation of the protocols account for another 15 to 19 percent of the probable raw score variance, indicating that individual "artistry" of interpretation is a rather large source of variance.

Of perhaps more sobering import is the fact that from 50 to 58 percent — over half — of the probable raw score variance must be considered error variance. Hopefully, this percentage would be markedly lower for experienced clinicians, although the present study indicates that two months of intensive experience even for initially naive interpreters has very little influence. It is possible, even probable, that other behavior items than those sampled by the present Q-sort might, if selected to represent common Rorschach interpretations, considerably reduce the unaccounted-for variance. However, they might also increase the tendency toward meaningless stereotypical interpretations. These are matters to be assessed in further research.

Dimensions not found to be relevant sources of variance are (1) the Q-items used, (2) the individual student treatment of Q-items, and (3)

the differential effect of course instruction on treatment of Q-items. The differential effect on instruction on individual student treatment of Q-items fails of significance in the clinical evaluations and attains questionable significance in the self evaluations. Considering the large size of the populations involved in these evaluations, their failure to attain acceptable levels of significance strongly suggests that they contributed negligibly to the total variance. These results indicate that at least in the present study, no "Rorschach stereotype" emerged. Contrary to a rather popular opinion, no stereotype such as "social acceptability" of the Q-items or "general pathology" or the like seemed to influence the sortings significantly. Course instruction seems to neither increase nor decrease the tendency toward such stereotypy and the individual student seems to be as immune to it as is the group as a whole. While these results are gratifying, they must also be wondered at. The protocols selected for evaluation were from a presumably rather homogeneous population that might be expected to have some legitimate "stereotypy" in it, since the subjects occupied the same, somewhat narrowly defined, social role. Nevertheless for whatever reasons, these effects showed no significance in the present study, possibly because of the diversity produced by selecting two subjects who differed greatly in role ability even though they occupied the same role.

SUMMARY

The study attempted to identify the relevant sources and amounts of variance of Rorschach interpretations made from blind protocols, by students just learning the technique. Course training was found to have a significant but small influence on the interpretations. The protocols themselves accounted for approximately one-fifth of the probable raw score variance. Individual differences in

interpretation of protocols accounted for only slightly less variance. Unaccounted for, or error, variance was found to make up over half of the probable raw score variance. Stereotypy of interpretation, independent of the particular protocols being assessed, was not found.

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Use of the Inspection Rorschach Technique in Analyzing Missionary Success and Failure

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The problem of adequate selection methods is one that has faced mission boards ever since missionaries have been sent to foreign fields. It has been only within the last two decades that progressively extensive use has been made of psychological testing to determine the abilities, interests, and personality factors of the missionary candidates. The present study was concerned with the problem of aiding in the selection of foreign missionaries. A total of 206 American missionaries belonging to 11 major mission boards participated in this study.

These missionaries were given the group Rorschach just prior to their departure for the mission fields. The protocols were analyzed after a period of seven years had elapsed from the time of administration of the Rorschach so as to make available an adequate judgment of the work of the missionaries in the mission field, against which their Rorschach performance could be compared.

PROBLEM

The purpose of this study was:

1. To determine the possibility of differentiating those missionaries who had been rated as "successful" from those rated as "unsuccessful" by analyzing their performance on the group Rorschach, using Munroe's Inspection Technique for the Rorschach protocol.

2. To construct a predictive formula which could help in the selection of missionary candidates.

3. To test the hypothesis that "unsuccessful" missionaries tend to be less well "adjusted" than those who

are rated as "successful", using the Inspection Rorschach *adjustment score* as a measure of "adjustment".

METHOD

The group Rorschach was administered using standard 35 mm slides according to the method recommended by Harrower and Steiner (1). After the ten slides had been shown, each for a period of three minutes in the upright position, the subjects were asked to turn to the location sheets which had been provided. Standard instructions were then given for the location of the responses and for obtaining the inquiry. The slides were projected again for a period of two minutes each for obtaining this information.

All the protocols were then scored according to Klopfer's system, after which the data was entered into a modified form of Munroe's check list. Thirteen additions were made to Munroe's check list items for the purpose of the present study in the hope that they might help in differentiating the groups under study, viz. the successful and the unsuccessful missionaries. The additions to the check list and the reliability analysis of the Rorschach scoring and check list completion have been explained in detail by the writer elsewhere (5).

Criteria for Rating the Missionaries

Since the subjects for this study belonged to 11 different mission boards the ratings of the subject's field performance were to be done by 11 personnel secretaries. In view of the large number of raters involved it seemed imperative that the criteria for successful and unsuccessful be as objective as possible.

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The following criteria were used to rate the subjects:

"Successful" missionaries were those who had continued as missionaries during the period of seven years since they had been given the group Rorschach, and who as such, could be considered as having made a successful adjustment in the limited sense that they had neither resigned nor been asked to leave the mission field.

"Unsuccessful" missionaries were all those who had resigned or had been asked to leave the mission field and who thus could not be considered to have made the successful adjustment defined above.

It was not possible for the personnel secretaries to place every missionary into one of the above categories. In each case where there was not sufficient information to make the judgment, or, where the missionary left his employment for purely health reasons or due to compelling external circumstances, the personnel secretaries were asked to use a third category, thereby removing that individual from consideration in the study.

Statistical Procedure

The method of multiple regression was used, and the group of 206 subjects was divided into two sub-groups for the purpose of cross-validation. It was judged to be important that the sub-groups be divided with due consideration to the problem of matching them for the three variables which were present in the entire group, i.e. marital status, mission board, and country of service. The total group was divided into two using stratified random sampling.

Data for Group A were analyzed to find a predictive formula. Biserial coefficients of correlation between each check list item and the criterion were computed, using the score obtained by the subjects on the various check list items. Six check list items having the highest biserial correlations with the criterion of successful and unsuccessful were used to com-

pute a multiple regression equation. The coefficient of multiple determination, the multiple R , and the b-coefficients were also computed. A similar analysis was then made for Group B, using the same six check list items which had been used with Group A.

By comparing the multiple R 's obtained by these two groups and also by comparing the coefficient of multiple determination and b-coefficients, it was possible to determine whether or not the predictive formula had held up adequately under cross-validation.

The remaining problems dealt with testing the hypothesis that "Unsuccessful" missionaries tend to be less well "adjusted" than those who are rated as "successful". To do this the difference which existed between the mean number of checks obtained by the successful and unsuccessful missionaries had to be determined. The number of checks obtained by each individual was held to represent a measure of "adjustment" (4). One could then test the hypothesis that the two groups were samples from a population in which the actual mean difference was zero.

RESULTS

Table I shows the results obtained when b-coefficients were computed for six items for the check list for the validation and the cross-validation groups. This table also shows the results obtained for the two groups when the coefficients of multiple determination and the multiple R 's were computed. It is evident from Table I that the results obtained from the validation group failed to hold up when subjected to cross-validation. The predictive equation is therefore of very little value.

On testing the hypothesis that "unsuccessful" missionaries tend to be less well "adjusted" than those rated as "successful", it was found that though the unsuccessful missionaries had a higher mean number of checks than that obtained by the successful

TABLE I. Comparison of the Statistical Analysis for the Validation and Cross-Validation Groups.

	R ²	S.E. of Multiple Estimate	R	S.E. of R
Validation Group.....	.2721	.3350	.5216	.0735
Cross-Validation Group.....	.1315	.4250	.3667	.0890
b-coefficients				
	Validation Group		Cross-Validation Group	
b ₂	+.1649		+.1394	
b ₃	-.2609		+.0831	
b ₄	-.0372		+.0069	
b ₅	-.1200		+.2825	
b ₆	+.0886		+.1868	
b ₇	-.3638		-.0434	

TABLE II. Mean Number of Checks Obtained by Successful and Unsuccessful Missionaries on Munroe's Items and Items Used in Study.

	Successful (N = 156)		Unsuccessful (N = 50)		Mean Difference	t Ratio
	Mean	SD	Mean	SD		
Munroe's Items.....	6.69	3.80	7.66	3.71	.97	1.585*
All Items.....	8.15	4.47	9.30	4.32	1.15	1.611*

*A *t* value of 1.972 is required for significance at the .05 level.

missionaries, thus showing a trend in the direction of the hypothesis, the difference when tested by the use of *t* was found to be insignificant at the .05 level. This finding is shown in Table II.

DISCUSSION

The results of this study apply only to the particular modification of the Rorschach used here and to the procedures used in this study. It is evident that, using the Inspection Rorschach, it was not possible to find consistent differences between the performance of missionaries who had been rated as successful and unsuccessful on the basis of their actual field work. An analysis of the validation group showed that there were some items which seemed to differentiate the groups adequately, however, under cross-validation these items proved to be of little value. The importance of cross-validating such findings is clearly indicated by this study. In considering these results an explanation might be sought in the type of criteria used for rating the missionaries, further, the adequacy

of the test used might be called into question. It is the view of the writer that under the circumstances of this study objective criteria, such as were used, are essential even though it could perhaps be argued that they might not differentiate the subjects as well as some more subjective ratings. If such a study is to be repeated and the results explained as objectively as possible the present criteria seem to be necessary. The writer is of opinion that the Individual Rorschach could do a more adequate job of differentiating the group under study here. Drawbacks to the use of the Individual Rorschach in this situation are the large number of persons involved, the consequent time factor, and the far greater expense incurred by such a procedure.

An explanation of the insignificant findings might be sought with regard to the specific hypothesis tested. Presuming that the measure of "adjustment" was adequate, one would expect to find significant differences in the two groups if the factor of general personality adjustment had been important to success in the mission

field. It is the opinion of the writer, and Thayer's findings seem to support this view (6), that the factor of general personality adjustment is important in missionary work in foreign fields. If then we do not obtain a significant difference between the successful and the unsuccessful missionaries it would appear to reflect upon the adequacy of the test used to measure "adjustment", and also upon the assumption that such a difference should exist.

There are also some cross-cultural factors involved in a study of this sort; a personality adjustment pattern which in the American culture might not be considered too desirable might be just the kind of adjustment required to make a "successful" missionary in certain other cultures. And, while it is a fair assumption that whatever the nature of missionary "success", and no one seems to know just what it is, certain personality factors would appear to play an important part in it, yet, the nature and importance of these factors appears to be little known at the present time.

Further research using projective techniques and other psychological tests needs to be done in this field. Though such tests, particularly projective techniques, are being used extensively for the selection of missionaries the writer has seen little published work relating to a statistical analysis of the actual effectiveness and predictive value of such tests. In studies which endeavor to set up predictive criteria on the basis of psychological tests, it seems very essential that the results be cross-validated before any definite evaluation of the results is made.

SUMMARY

The present study concerned 206 American missionaries working in foreign fields. The purpose of the

study was to try to determine if missionaries who had been rated as "successful" and "unsuccessful" using their field work as a criterion, could be differentiated on the basis of their Rorschach performance. And, if so, to construct a predictive formula for the selection of missionaries using the Inspection Rorschach Technique. The hypothesis that, "unsuccessful" missionaries tend to be less well "adjusted" than those who are "successful" was also tested.

The findings of this study were insignificant in each case. Though six items from a modified form of Munroe's check list showed promise of differentiating the successful and unsuccessful missionaries, on cross-validation the results failed to show any significance. With regard to the specific hypothesis tested it was found that although a trend in the direction of the hypothesis was indicated, yet the difference was not significant at the .05 level. The value of cross-validating the findings of such studies is indicated by this study.

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Mosaic Patterns of Eighth Grade Children

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The purpose of this study is to determine the types of mosaic patterns made by the early adolescent; to observe developmental trends; to note whether sexual differences are reflected; to study the predictive value of specific patterns (such as had been found in an earlier study with first grade children (3) and by other workers concerned with differential diagnosis) (4); to note any cultural differences that might be found between American and English children of this age as had been observed in a previous study. (2)

SUBJECTS

In order to have as unselected a group as possible, all eighth grade children in a Long Island public school were examined for several successive years. The total sample of 125 ranged in age from 11 years, 3 months to 15 years, with the greatest number falling at the 13 year level.

TABLE I. Age Range

Age	Percentage
11	0.8
12	14.2
13	70
14	13
15	2

There were 71 boys and 54 girls. With the exception of 1 Negro girl and 1 Japanese-American boy, all children were white and came from average income homes. Intelligence test results were skewed positively, a fact not surprising in view of the exclusion of the seriously mentally retarded from the regular classes and the fact that children in this district are known to have a median in the bright normal category. The I.Q.'s in

the group ranged from 67 to 144 with the distribution given in Table II.

TABLE II. I.Q. Range

I.Q.	Percentage
Under 70	0.8
70-79	1.6
80-89	5.6
90-99	16.
100-109	25.6
110-119	28.
120-129	10.4
130-139	9.6
140-149	2.4

The two examiners, well known to the children, included the mosaic in the routine battery of tests given each eighth grade child prior to his admission to high school. The boys and girls were on the whole interested in the tests since the results were discussed with them (and at a separate session with the parents) with a view toward helping them select the appropriate high school course. Thus, in addition to the individual intelligence test (either the Stanford-Binet or the Wechsler-Bellevue) and the mosaic, group vocational interest and aptitude tests were administered.

The Lowenfeld Mosaic Test materials are 456 plastic pieces comprising five shapes and six colors which are presented to the subject in a box and arranged according to shape and color. Lowenfeld's selection of shapes was originally based on what she found to be the "fundamental" patterns of European folk design. A tray is placed directly in front of the subject with the box to one side. One of each type of chip is placed on the tray by the examiner. When these have been replaced in the box the subject is instructed to "make anything you like". This is the standard

procedure for children as worked out at the conference held at the Catholic University, Washington, D.C., May 27, 1950. Colored tracings are kept of each subject's performance together with notes concerning his attitude, method of attack, whether he was satisfied with his performance, etc.

In 1956, that is from three to five years after the subject had been tested, a follow-up rating was given each child based on the principal's and assistant principal's comments. Although the boys and girls had by this time passed on to secondary schools outside the district, the present status of 90% of the original group was known to these administrators. This was due to the following factors: academic ratings were routinely sent to the originating school; any unusual circumstances were usually discussed with these administrators; the small size of the community gave ample opportunity to observe these children in other than the school setting.

An Adjustment Rating I was assigned for outstanding adjustment, both academically and socially. 10% of the group fell in this category. Samples of comments are: "boy is active in school affairs; is president of the student council; is tops in his class (with a 95 average); plans to go to engineering school." ". . . girl just graduated from high school, commercial course. Received several awards for scholarship and athletics; socially active; chairman of Senior Prom, etc."

Adjustment Rating II implies adequate adjustment socially and academically to the extent of which subject is capable. This rating was given to 67.4% of our sample. Typical comments of the administrators are: "He is now going to a private military school since his father, a sea captain, feels all children need more discipline than provided in public schools. The boy looks well, likes his school and ranks at the top of his class." "This girl is going to a private secondary

school where she is getting good grades; she is very pretty and well liked."

11% of the children came under the category of Adjustment Rating III. In these cases, the administrators felt there was evidence of serious maladjustment. For the boys this usually meant pre-delinquent or delinquent behavior which had come to the attention of the court officially or unofficially (stealing a car, breaking and entering, vandalism, etc.); while for the girls this usually meant sexually promiscuous behavior along with refusal to observe school rules, etc. The present status of 10% of the group was unknown while 1.6% had died.

RESULTS

The classification of the mosaic patterns made by these eighth graders is given in Table III along with the percentage falling in each group. The terms employed by Dr. Lowenfeld in her recent book (1) have been used as much as possible.

Representational classification. As seen in Table III, 68% of the entire group made this type of mosaic. These are further divided as follows:

Kite: Only one individual, a girl of normal intelligence, made this type of design. She was rated in the follow-up as "poor" in adjustment.

Direct representations: This type of representational pattern, made by 2/3 of the group, can be interpreted as one does drawings and paintings. The execution varies from simple patterns composed mostly of squares to clever and original ones.

Buildings were made by 21% of the total group. Of these, *houses alone* were made by 11% most of whom were males. Of the three girls who made houses alone, two were rated as maladjusted while on the third we had no follow-up information. Two of the houses incorporated bizarre features; of these one was made by a poorly adjusted male and the other by a girl on whom we have no rating.

TABLE III. Classification of Patterns

Classification	Description	Percentage of Subjects		
		Male	Female	Total
I. Representational				
A. Kite	The subject in moving about pieces at random or in combining single pieces makes a new form which pleases him. When this occurs, he is struck by a resemblance between what he has made and some familiar object—e.g. in the simplest form, the "kite" made by 2 triangles.	0	0.8	0.8
B. Direct Representation	(self-explanatory)	37.6	29.6	67.2
II. Abstract				
A. Patterns with recurring form	Abstract pattern where attempt is made for symmetry and definite shape.	16.8	11.2	28.
1. center	Where such a pattern is placed well within the tray.	6.4	6.4	12.8
2. edge	Where such a pattern is placed in relation to the edge of the tray.	4.8	2.4	7.2
3. whole tray	Where the pattern is related to the edge and the whole tray is used.	3.2	0	3.2
4. Collective Patterns	Where several small patterns are made but not considered as forming a single design.	2.4	2.4	4.8
B. Patterns without recurring form	Where symmetry and definite shape are not the aim of the subject. In this group the attitude and intentions of the subject must be known to the examiner.	2.4	1.6	4.0
1. designed slab	Where a pattern of a slab* nature has been deliberately constructed and is considered pleasing and successful by maker and critics.	0.8	0.8	1.6
2. whole tray	Where the whole of the tray is used in "free" and asymmetrical fashion.	1.6	0.8	2.4

(*slab is defined by Lowenfeld as a number of pieces placed closely or loosely in juxtaposition to each other without creation of overall symmetrical shape)

Houses as part of a scene were made by 4% of the entire group, all girls and all making average or better adjustments. *Buildings other than houses* were made by 6%, mostly males. Two were made by poorly adjusted boys—one, "a prison wall", by a boy who is now on probation for robbery and the other, "a front of a garage", by a boy who has since been involved in car stealing.

Flowers alone were made by 8%. In Europe this is found to be a distinctly feminine pattern. However, we found that two of our ten were

made by boys. One boy who is now making an average adjustment made a series of flowers which were distinctly experimental in quality; another very bright boy on whom we have no follow-up data was, at the time, living alone with his mother, a French widow employed in domestic service.

Airplanes and *space ships* were made by 6% of the group. With one exception all were made by males. The girl made a space ship attacking the earth in a destructive, aggressive way. It is interesting to note that she

had originally attempted a house. At that time she was known to be having difficulty in her social relationships.

Human beings were made by 5% of the group. Children were depicted only by girls while adults were portrayed by boys. The only subject of this group who is now making a poor adjustment is a girl who made a family with strong phallic features.

Animals were made by 2%, a boy and a girl. The boy had originally attempted a boat but was dissatisfied with it. Both children are presently well adjusted. The animals were cleverly executed and showed motion.

Scenes were made by 10%. With the exception of one, a "primary system" scene, all were made by children of superior intelligence. Two impressionistic scenes (mosaics used as paint) were made by very well adjusted children.

Miscellaneous objects were made by 15% of the group with twice as many boys as girls in this category which included fireplaces, flags, checkerboards, etc. Two patterns representing natural forces (lightning, atoms) were made by superior children.

Abstract patterns were made by 32% of the group: 20% boys and 12% girls. *Patterns with recurring form*—(i.e. where symmetry was attempted) were made by 28% of the total group. Roughly half of these were center patterns, the other half were almost evenly divided among edge patterns, collective patterns and whole tray patterns.

Of the centered symmetrical patterns, only three were unsuccessful; all made by males. Of these, one was killed in an automobile "accident": one is making an adequate adjustment; one is delinquent. The pattern made by the last boy was striking—entirely yellow, distorted, heavy, unpleasant, and anthropomorphic.

The patterns indicating perspective were all made by bright children.

Of the edge patterns, only one was

unsuccessful and this was made by a now delinquent boy. Again, this pattern stood out because of its unpleasant quality. It grew diagonally from the corner and was made in the form of bold red and white stripes—thrusting and destructive. Half the edge patterns were frame and item rather than the simple edge patterns one gets in a younger group.

Of the patterns covering the tray, one out of the four was made by a delinquent. It was a successful, compact design with nothing outstanding about it.

Patterns without recurring form were made by only 4% of our group. The only slab patterns were made by delinquents. These are the type Dr. Lowenfeld has described as designed slabs since they were deliberately constructed and were considered pleasing both by the maker and critics. Compact and free patterns using the whole tray were made by adjusted children.

CONCLUSIONS

Developmental Trends

In comparing this early adolescent group with 100 six year olds we notice the following differences:

1. A greater tendency toward abstract designs (33.3% as compared with 20%).
2. The use of perspective. Lowenfeld reports this trend as beginning at about the age of twelve. It may indicate the early adolescent's capacity for maturing, including his greater awareness and his capacity for abstraction.
3. Almost complete disappearance of the "kite" response (in the one case found, it was produced by a maladjusted child.)
4. Almost complete disappearance of "primary system thinking". (In our only example, the child was generally considered immature and inadequate.)
5. The appearance of the cruciform and winged patterns which Low-

enfeld believes indicative of the emotional turmoil of this age level.

6. A change in the selection of type of representational pattern by the bright, adjusted youngster. In our 6 year old group, these children were more apt to make miscellaneous objects while in our present study, "scenes" were almost entirely the production of the bright, adjusted boy and girl.

Sex differences

Since the boys outnumbered the girls in our study, the following findings are based on the ratio of boys or girls making a specific design to the total number of the same sex.

1. Flowers are represented by girls proportionately ten times as often as by boys, indicating perhaps the greater narcissism of the adolescent girl.
2. A proportionately greater number of girls depicted "human beings" and only the female sex constructed "children" with their mosaics. This might postulate a greater interest in human and family relationships on the part of the female at this age.
3. Airplanes are the dominant masculine choice, indicating perhaps the greater interest of the male in "objects" as compared with "personal relationships" and also expressing a greater amount of aggression.
4. Houses by themselves are made proportionately by three times as many boys as girls; other buildings, by a slightly larger percentage of boys; but, houses "as parts of scenes", only by girls. One might speculate that the tendency of the adolescent female to embellish her houses by the addition of trees, flowers, sky, etc. is again the expression of her narcissism, her body-awareness. One might also speculate that the far greater number of houses made by boys might in-

dicate a stronger dependency of the male at this age on the home or at least, more feeling about growing away from the home.

5. Abstract designs are depicted equally by both sexes but with the following difference: almost twice as many boys as girls made edge patterns while a slightly higher proportion of girls made centered patterns. This again might point to the greater maturity of the female at this age.

Intelligence

As we reported in a previous study, intelligence plays no dominant role in the production of a mosaic pattern. However, the following may be noted: the brighter child, who is adjusted, has more ideas as well as the ability and freedom to integrate them. For example, "scenes" were almost exclusively depicted by bright, adjusted youngsters. Almost all of our abstract patterns showing perspective were also made by bright children. On the other hand, the "kite" pattern at this age level is indicative of some emotional difficulty rather than an intellectual defect.

Predictive Value

In order to predict future adjustment from the mosaic pattern, more than one design from a given subject is necessary. However, among our 11 maladjusted youngsters the following features may be noted: 1 "kite" pattern, 2 age inadequate representationals; 1 bizarre; 1 dysphoric; 2 ugly and unsuccessful; 2 highly sexual; 2 "slabs". Of the remainder, 1 was mediocre in quality while 2 were well executed and seemingly "normal".

Our "slab" patterns were constructed only by maladjusted youngsters which is in accord with Dr. Lowenfeld's experience although not with some of our own previous findings. However, it must be remembered that our sampling of this type is extremely small.

Movement was indicated by 11% of our group. Strong, downward plunging movement, even in an abstract design, seems indicative of stress. When this movement was without form, seemingly with no intellectual control, the subject later showed problems of adjustment. When the movement was strong but not downward, the child later showed no serious difficulty and was apt to be a bright youngster.

In interpreting mosaic patterns, it is generally agreed that representationals can be understood in the same terms as drawings and painting. However, abstract patterns frequently reveal feeling tones and qualities which can only be discerned by the worker who has had a great deal of experience with mosaics. Changes in the patterns during its production must also be noted since the final emergent design seems frequently to be an expression of deeper, unconscious motivation. For example, several of our children began with rather banal, conventional patterns but changed to others which seemed more indicative of what we knew to be at the time areas of conflict. One girl began to depict a house but changed it into a bolt of lightning. A bright youngster, she was at that period quite disturbed by her father's pronouncement that she would be unable to take the college entrance course in high school since she was a girl and therefore "only good" for motherhood. Another girl who changed a conventional house to a space ship attacking the earth, was at the time having a good deal of difficulty in her social adjustment. Both of these youngsters, under stress, turned from the more passive pattern to the more aggressive, destructive type. A boy, who first attempted a boat moving forward, changed to a "cute" penguin while another, from a racing car to a rabbit jumping. Both of these boys were having some adjustment problems

during this period. One would speculate from the mosaics that the girls mentioned were attempting to solve their difficulties in a more aggressive way while the boys were adopting a more passive role.

Cultural Differences

In both our 6 year old and our early adolescent group, the American child makes significantly more representational patterns than the English. As the American grows older, however, there is a tendency to draw somewhat closer to the English pattern. Although the English youngster at this age level apparently aims at symmetry in both form and color of design (Lowenfeld reports 82.6% successful designs), the American child seems satisfied and even pleased with asymmetry and apparently feels no need to execute his pattern "perfectly". In our previous study of a group of 13 to 18 year old children, our "successful symmetricals" totalled 23.6% while in the present study, 37.5%. In other words, the American youngster seems less inclined to fit into a set pattern, seems less concerned with the detail necessary for a painstaking performance, and is more interested in "things" in the world about him than the English child.

SUMMARY

A study was made of the mosaic patterns of 125 eighth grade children, falling in the early adolescent age group. We continue to find a predominance of representational as opposed to abstract designs, with houses and buildings constituting the major sub-classification. However, we note at this age a greater tendency to abstract designs than found previously; the appearance of the cruciform and winged pattern; the use of perspective; and, among brighter children, the ability to integrate ideas on a high level. Definite sex differences were found as well as cultural differences between the Americans and English. The mosaic also proved

to be of predictive value in the hands of a skilled worker.

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Productivity as a Variable in TAT Protocols—A Methodological Study

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While the TAT has proved to be a useful set of stimuli for personality research, studies of the TAT as a clinical tool have pointed toward practical and theoretical difficulties (2, 9, 10, 15). It has become increasingly clear that the TAT, like other psychological tests, is not "valid," but valid under particular circumstances for specific tasks. The concepts and procedures for establishing the usefulness of projective techniques is still a matter of debate (6, 7, 13, 17, 18).

At the most general level, the task of the clinician in evaluating the data gained in projective interviews is that of describing the behavior of the subject in terms of some extra-test variable which is either qualitatively or quantitatively expressed. Typically, as Hammond (7) points out, the operations of the clinician are not separated from the data with which he deals. The null hypothesis in research studies of the validity of projective devices has been set to date at chance or zero relationship. No consideration is taken of the amount of test material from any given patient with which the clinician has to work, and it is implicitly assumed that all protocols of a given device are of equal usefulness. In practice, however, the clinician is aware that there are barren protocols, and that with different patients the responses to a projective test may range from the crucial to the immaterial. Murray (16) provides a correction factor and notes

a minimum number of words as a requirement of validity in the use of the TAT with college students. Eron and his co-workers (4) have devised rating scales for the evaluation of the intensity of feeling produced in a TAT story. In a similar manner, Weisskopf (21) has pointed out the utility of evaluating what the patient puts into the protocol.

Productivity of the patient in the test situation will be considered in this study as a piece of information which may differentiate subjects in terms of a criterion. The empirical data consists of two quantifications of patients' productivity on the TAT contrasted with global judgments by clinicians of the same protocols in relation to an explicit criterion. The criterion to be predicted will be adequacy of interpersonal relationships as measured by the Palo Alto Group Therapy Scale (GTS), (5). Two scores of productivity employed here will be the number of words per picture and the number of emotional words per picture made in TAT responses. The selection of these variables as pertinent measures of the amount of protocol material stems from: (1) the consideration that they are among the most easily quantified basic aspects of the response made to the TAT situation; (2) the evidence of Rorschach studies that productivity underlies many of the further derived scores (11, 22); and, (3) the theoretical contention that the ability to communicate, indicated by both quantity of verbalization and emotional expressiveness, is related to social adequacy.

The specific hypotheses to be tested are that: (1) productivity, as measured by the number of words per TAT picture, is related to interpersonal ade-

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quacy as measured by the Palo Alto Group Therapy Scale (GTS); (2) emotional expressiveness, as measured by the number of emotional words per TAT picture, is related to interpersonal adequacy as measured by the GTS; (3) the number of words and the number of emotional words per TAT picture are related to global predictions of the GTS made by clinicians using the TAT; and, (4) since supposedly the judgmental manipulations of the clinician add significantly to the validity of the test process, ratings by clinicians will be related to the measure of interpersonal adequacy to a significantly greater extent than either measure of the amount of material in the protocol.

METHOD AND PROCEDURE

The specific data to be presented includes a description of the criterion to be used, of the two samples of TAT protocols, of the task and reliability of the clinicians and of the two quantified scores of TAT material.

The Criterion. Finney (5) has published a method for rating patients' behavior in therapy groups called the Palo Alto Group Therapy Scale. This measure was built around the variable of adequacy of interpersonal relationships as manifested in the group therapy situation. The scale consists of 88 items, each of which differentiates at the .01 level between the upper, middle and lower thirds of group members as rated by therapists on the variable of interpersonal adequacy. The rater reliability is .90. Using 18 therapy groups in a neuropsychiatric hospital, the median rank order correlation of scores on the scale with global ratings by group leaders was .84. In a further validation study within the hospital setting, the average rating of 10 ward personnel, as to adequacy of interpersonal relationships as manifested throughout the hospital, related .80 with ratings made by group leaders on the GTS. The GTS was used as a criterion in

this study because it is a reliable method of quantifying those cues which are the basis of judgments of socially adequate behavior, and because it has demonstrated empirical validity within the neuropsychiatric hospital. Beyond these considerations, behavior in a therapeutic situation and adequacy of interpersonal relationships are factors about which the clinician frequently makes decisions from test protocols.

The Samples. Two samples of TAT protocols were used. The first sample, called the standard administration sample, included 60 TAT protocols administered within two weeks before or after a GTS rating. Testing was done an average of 2.5 days before the criterion rating with a standard deviation of 5.0 days. This sample was collected by one examiner using standard instructions and inquiry. Six cards were used: numbers 4, 6BM, 7BM, 13MF, 15 and 17BM.

A second group of protocols was collected to test further the relationships found with the standard administration sample. Forty-six TAT protocols administered by 23 examiners as part of routine psychological examinations form the representative administration sample. These TATs were administered from 117 days before to 94 days after the GTS rating. The median time of administration was 14.5 days before the criterion rating, the average being 24 days before the rating with a standard deviation of 32 days. The number of TAT cards used ranged from 5 to 20, the median number being 9.6, the average 9.7 with a standard deviation of 3.0 cards. In over half the cases, cards 1, 2, 3BM, 4, 6BM, 12M and 13MF were used. The instructions to the patient, type and number of inquiry questions, number and choice of the cards and method of recording the patients' responses were not uniform from examiner to examiner.

Global Judgments of the TAT. Five clinicians predicted GTS ratings from

the TAT protocols. These clinicians had had considerable experience with the TAT in neuropsychiatric veteran hospitals and were familiar with the criterion measure. With the standard administration sample, one clinician predicted the scores of the GTS rating for the 60 cases. Two other clinicians rank ordered one-third of the cases with regard to the criterion variable. The rank order correlations among the three clinicians on these 20 cases were: .76, .71 and .68. The other two clinicians were assigned the task of dividing the 46 cases of the representative administration sample into high and low on adequacy of interpersonal relationships as measured by the GTS. The two raters agreed on the placement of 35 of the 46 cases, yielding a chi-square significant beyond the .001 level.

Scores of the Amount of TAT Response Material. The two measures of the subject's productivity in the TAT situation were the average number of words and the average number of emotional words per TAT picture response. The number of words was the number of all the words recorded by the examiner as the subject's response to the card. Words which expressed how the subject felt about the test, exclamations, comments to the examiner, etc., if recorded by the examiner as part of the responses, were included in this score. No reliability estimate was made for the number of words per picture since it was a direct counting procedure utilizing a minimum of judgment.

The second productivity score was the number of emotional words per picture. As with the number of words per picture score, comments and exclamations made to the examiner were included in the word count along with the purely story-oriented verbalizations. Using 20 cases from the more homogeneous standard administration sample, rater reliability of emotional words per picture yielded a product moment correlation of .92 and a rank order correlation of

.94. The material defining emotional words which was used was presented in terms of general, specific and example definitions and is as follows:

General definition: Words with a special "punch" to them, which convey tension, action, or feeling, which breathe life into communication.

Specific definition: Nouns which deal with interpersonal relationships of a tensional nature, such as competition, hope, approval, trouble, strength, sanity, argument, decision, problem.

Verbs which deal with human tensions or motivations, such as strive, plead, hang, restore, try, wonder, love, lose, regret, endure, must, want, stare, frustrate.

Modifiers, either single words, or groups of words counted as one emotional word, which tell of the human condition beyond the overtly descriptive. Such words as extra kick, reached the end, cheer up, wrong, bewildered, daze, strained, willful, rash, impulsive, cool, going too far, tense, depressed and decisive are emotional words. Words which are descriptive of the stimuli such as young, old, male, female, mother and son (for 6BM), graveyard (for 15) are not emotional words.

Words which are not in any of the above categories, but which communicate emotion. Exclamations such as "heck with her," "this is hard," or "like me fixing to leave home" are examples. Unusual or unexpected combinations of words which are expressive and are not due to the subject's inattention to stimuli, such as holy protector, side of sympathy, but it has been done, are examples.

Example definition: 17BM: . . . He seems like he's afraid of sliding down the rope. He doesn't seem very happy about the situation. (more?) No, I don't have too much. (happen?) No, it doesn't seem too much to describe here. (score is 2)

4: . . . Well, this picture seems, this first seems upset and she seems to be trying to talk to him, and he seems to be very angry about the situation. (what sort?) No, I see another woman in the background. I don't know if they quarrelled or not. He looks like he's in a kind of daze. He doesn't want to talk about it, whatever it is. (score is 6)

RESULTS

The Standard Administration Sample. Table I presents the product moment correlations between the group therapy scale (GTS), the TAT global

rating (GR), the number of emotional words per picture (EW) and the number of words per picture (#W) for the 60 protocols of the standard administration sample. In the second section of the table, the critical ratios of the correlations are presented.

TABLE I*—Intercorrelations and Critical Ratios of Amount of Material, (EW and #W), Global Ratings (GR) and Palo Alto Group Therapy (GTS) Scores for TAT Protocols of 60 Patients at a V.A. Neuropsychiatric Hospital

	GTS	GR	EW	#W
GTS.....	....	.58	.51	.38
GR.....	5.1	....	.55	.43
EW.....	4.2	4.6	....	.88
#W.....	2.9	3.5	10.0	....

* A discussion of the selection of patients for group therapy by use of test measures may be found in Ullmann (20).

Hypothesis 1, that the number of words per picture is related to the criterion, GTS, is substantiated beyond the .01 level of statistical significance. Hypothesis 2 is also substantiated, as the number of emotional words per picture is related beyond the .001 level of statistical significance to the GTS criterion. Hypothesis 3, that the two measures of amount of material are related to global ratings of the protocols in terms of the GTS criterion is also upheld, the correlations being statistically significant beyond the .001 level. Hypothesis 4, that the global rater would demonstrate greater validity than the single isolated variable of amount of material is not clearly demonstrated. When the number of words per picture is compared with the clinical judgment of the global rater, the significance of the difference between the correlated correlations yields a t ratio of 1.68, significant at the .10 level of statistical significance. The t ratio of the difference between the correlations of number of emotional words and the global ratings to the criterion is 0.61, the difference

being in the expected direction but not statistically significant.

The Representative Administration Sample. To check the relationships obtained with the standard administration sample under conditions which were closer to the daily clinical setting, the four hypotheses were tested on the data of the representative administration sample. Skewed distributions due to differences among examiners in test administration and protocol recording were found for the scores of the amount of material. For this reason, biserial correlation with the GTS as the graduated variable was used throughout work with this second sample.

Hypothesis 1, that there is a positive relationship between the average number of words per picture and the GTS criterion is upheld. The biserial correlation between the average number of words per picture and the GTS for the 46 cases of this sample is .30, significant at the .05 level of statistical significance (one-tail test). Hypothesis 2 is also supported by the finding of a predicted significant positive relationship: the biserial correlation between the average number of emotional words per picture and the GTS is .40, significant beyond the .025 level (one-tail test).

Two clinicians sorted the 46 TAT protocols of the representative administration sample as to probably high or low on the GTS. The first of these clinicians, R-1, had a chi-square relationship of 7.05 with the average number of words per picture, and a chi-square of 2.17 with the average number of emotional words per picture. The judgments of the second global rater of this sample, R-2, had a chi-square relationship of 5.58 with both the average number of words and the average number of emotional words per picture. These results indicate that hypothesis 3 holds up, and that amount of protocol material is related to global judgments of TAT protocols as to interpersonal relation-

ships. On the representative administration sample, the number of words per TAT picture is significantly related to the ratings of both clinicians, while the number of emotional words per TAT picture is significantly related to ratings of one of the clinicians, and shows a trend relationship with the other.

The fourth hypothesis was that the global evaluation of TAT protocols will be more valid in relation to a criterion than will single isolated cues such as the variable of amount of material. The first clinician, R-1, obtained a biserial correlation of .14 with the GTS criterion. This relationship is not significantly better than chance, and is of a lower magnitude than either of the measures of amount of material. The second global rater of the representative administration sample, R-2, obtained a biserial correlation of .50 with the GTS criterion. For the 46 cases of this sample, this relationship is significant at the .01 level of statistical significance. Because biserial correlation was used, the test of significance of difference between the correlated correlations was done by comparing the number of cases correctly placed when the clinician and the measure of amount of material were in disagreement (12).

Table II presents the chi-square relationships, after Yates correction had been applied, for the number of hits and misses of the global rater, GR, of the standard administration sample, and the two raters of the representative administration sample. The chi-squares are positive if the clinicians placed more protocols cor-

rectly than the measures of amount of material, and negative if the measures of amount of material placed more protocols correctly in terms of the criterion.

Table II indicates that as far as an increased number of correctly placed protocols in terms of the GTS criterion, hypothesis 4 is not substantiated by the performance of any of the clinicians. Rather, there is a trend in favor of the measures of amount of material. Such results were to be expected with clinician, R-1, who did less well than either of the measures of amount of material, but were not expected in relation to GR and R-1 who obtained higher correlations than the scores of amount of material. While these findings might lead to interesting speculations, the lack of clear statistical relationships in the present results makes it impossible to reject the null hypothesis for hypothesis 4 under the conditions of the present experiment.

DISCUSSION

Within the limits of the patients and the clinicians used in this study, information regarding the relative amount of material produced on the TAT may be considered a useful indication of the criterion of interpersonal adequacy as manifested in the group situation. In the present study, the further manipulations of the protocol material by the clinicians did not add significantly to the information obtained from the score of the amount of material. This finding is of a preliminary nature and limited to a small sample of clinicians. However, it suggests that quantified measures of productivity can serve as one possible baseline for the evaluation of the clinician's usefulness. It may be argued that the relationship of the amount of material to a criterion provides a more realistic baseline for the evaluation of the clinician's global impressions than a null hypothesis of chance relationship. The scores of the amount of material which were de-

TABLE II—Chi-square Relationships After Yates Correction: Comparison of Clinicians and Scores of Amount of Material in Correctly Identifying Ratings on GTS

	#W	EW
GR.....	0.06	-0.23
R-1.....	-1.79	-2.72
R-2.....	-0.27	-1.06

rived in this study also may have value in studying what sort of stimuli are likely to produce responses which are clinically useful. Eron (3) has pointed out the differences in number and type of thema produced in response to various TAT cards, and it seems reasonable to hypothesize that the usefulness of TAT cards (1, 8, 19) is related to the relative amount of material verbalized in the average response. With the method introduced here, it is possible to measure productivity first and correlates in the stimuli second.

The method of measuring productivity by the use of the average number of emotional words per card response was formulated in our hypotheses as a score of emotional expressiveness. In dealing with studies of clinical usefulness, then, the number of emotional words may help in determining the part played by expression of emotion in clinical evaluation. More refined analysis may show that the relationship of clinicians' judgments and the number of emotional words differ due to the variable of appropriateness of the patient's use of the material.

Having the clinician make conscious use of the predictive usefulness of the productivity variables immediately occurred to us. The rater, GR, was provided with the productivity scores (#W, EW), the TAT protocols from the representative sample, the predicted criterion scores (based on the relationship between amount of material and the GTS (1) and again asked to make predictions of the GTS scores. While his global ratings on the standard administrative sample data correlated at .58, in this second instance, the correlation fell to zero. In retrospect, it would appear necessary to set a "permissible range of change" for the predicted criterion score (from any quantified measure) to safeguard the amount of variance already accounted for by the relationship between the predictor variable and the criterion. One other

consideration seemingly should be noted. It appears from inspection of our data that all the raters could predict more readily scores on both extremes of the criterion scale than those scores in the middle range. This possibly suggests that the clinician should not "tamper" with the mid-range scores where he is likely to be penalized for his lack of reliability but should feel freer to change scores that are at the extremes of the productivity continuum. Empirical testing of these notions is obviously needed.

The present results lead to a final hypothesis about the functioning of the clinician: in our formulations of the likely relationship between number of emotional words and the GTS criterion, we made a prediction which essentially stated that a patient who was more productive in the test situation would be more likely to be of greater productivity in the group situation. This position is similar to some of the formulations of the clinician's role of Meehl (14). In short, we specified a behavior which could be extrapolated from one situation to another. Where test and criterion behavior are maximally similar, there is little room or need for the accumulated experience and knowledge of theory which distinguishes the clinician from the automaton. It may be hypothesized that as the relationship between the test sample of behavior and criterion, or the criterion itself, becomes an increasingly theoretical one, the clinician's ability to transcend the protocol material increases.

SUMMARY

The purpose of this research was to demonstrate the value of conceiving the amount of material produced by the subject on the TAT as information which can be considered, prior to, and separate from, the manipulation of protocol data by the clinician. The amount of material produced by the subject was treated as a piece of information which has validity in re-

lation to a criterion and which can be related to global judgments of that criterion by clinicians. Finally, the relationship of the amount of material to the criterion was suggested as a more realistic baseline for evaluating validity of clinicians' manipulation of material than the customary baseline of chance relationship.

To demonstrate these ideas, the average number of words and the average number of emotional words per TAT card for two samples of VA neuropsychiatric patients were related to ratings of the subjects on the Palo Alto Group Therapy Scale, a measure of adequacy of interpersonal relationships. Independent estimates of the group therapy scale ratings were made from the TAT protocols by skilled clinicians. The first sample consisted of 60 protocols administered in a standard fashion by one examiner. The second sample consisted of protocols of 46 patients which had been administered by 23 examiners as part of routine psychological examinations. These data served as a check on the results of the first sample by providing an estimate of the obtained relationships under typical clinical conditions. The relationships obtained indicate that measures of the amount of TAT material are related to the criterion of adequacy of interpersonal relationships as manifested in group therapy and to ratings from the TAT by clinicians of this criterion. There was no indication that the clinicians in this sample predicted the present criterion significantly better than the score of the amount of material produced by the subjects.

Implications of the results were discussed in terms of providing a method for measuring the amount of material produced in response to projective stimuli, and in terms of ascertaining how this material may best be used. It was hypothesized that the clinical usefulness of projective stimuli is related to the amount of material likely to be produced by subjects. It was

further hypothesized that a clinician is most likely to transcend the protocol data when he has (1) sufficient material with which to work and (2) is predicting a complex criterion for which there is no direct extrapolation from the test data or situation.

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An Experimental Investigation of "Label-Avoidance" as a Manifestation of Repression¹

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The present study was stimulated by Tomkins' (5) discussion of remoteness and its use in the measurement of repression. The concepts used here, however, differ somewhat from those originated by Tomkins.

External stimuli can be conceived to vary on a continuum with respect to the degree of association with certain impulses. For example, a scantily dressed woman in an alluring position is more closely associated with the sex impulse than a plainly dressed woman working at a desk. This is just another way of saying that in most people, the former stimulus will arouse the sexual impulse to a higher degree than the latter. The hypothesis of this study can be loosely stated as follows: to the extent that an impulse is repressed, its expression in response to a stimulus tends to be "inappropriate" in terms of the degree of association of the stimulus with the impulse. That is, a strongly repressed impulse is less likely to find expression when the situation calls for it than when the situation does not call for it.

This hypothesis can be illustrated by various clinical observations: a man with strong repressions in the erotic area may not express erotic feelings in such erotic situations as dancing and dating, yet he may express them quite spontaneously in situations associated with work or sports. A neurotic who has difficulty

experiencing enjoyment may not be able to enjoy situations ordinarily seen as pleasurable, e.g., vacations, parties, etc., but he may be able to gain pleasure from situations that ostensibly were not designed for this purpose.

The TAT responses of subjects with strongly repressed sexual or aggressive impulses might serve as another example. Such subjects frequently fail to tell sexual or aggressive stories in response to pictures having obvious sexual or aggressive content; instead, they tell such stories in response to pictures that are not normally associated with these impulses.

In this paper stimuli that are closely associated with a given impulse are characterized as "carrying the label of that impulse". Thus, a date with someone of the opposite sex contains a combination of stimuli carrying the label "eroticism". Similarly, a TAT picture showing a boy with a gun carries the label "aggression". However, to carry the label of an impulse is undoubtedly a matter of degree. Our hypothesis could thus be restated loosely as follows: people who strongly repress an impulse tend to avoid expressing this impulse in situations carrying its label to a high degree. The mechanism under examination, then, can be called "label-avoidance".

The resemblance between label-avoidance and displacement is immediately apparent. There is an important difference, however. In displacement the object of the impulse is changed, while in label-avoidance the same impulse is expressed towards

¹ A part of this paper is based on a thesis presented to the Graduate School of Purdue University, Lafayette, Indiana, by K. J. Albrecht in partial fulfillment of the requirements for a M.S. degree in psychology. The study was directed by E. Weisskopf-Joelson and E. J. Asher.

the same object under different circumstances. For example, if the impulse of aggression against a parent were subjected to displacement, it might be redirected towards a person different from the parent. If the same impulse were subjected to label-avoidance, aggression against the parent would be expressed under circumstances where it is inappropriate or unexpected.

Why should subjects characterized by strong repression of an impulse find it easier to express the impulse in situations that do not carry the label of the impulse to a high degree? A possible explanation is as follows: Stimuli that are closely associated with an impulse tend to arouse it to a higher degree than stimuli that are only slightly associated with it. On the other hand, the more strongly an unacceptable impulse is aroused, the stronger should be the defenses that are mobilized against its expression. Therefore, the defenses can be expected to decrease with decreasing association of the stimulus with the unacceptable impulse. Applying Miller's (4) theory of displacement to label-avoidance, we assume here that the strength of the defenses falls off more steeply with decreasing association of the stimulus with the impulse than does the strength of the unacceptable impulse. Following Miller, an increase in the strength of the defenses (e.g. of repression) should thus shift the expression of the impulse in the direction of stimuli that are less strongly associated with it (see 4, p. 168).

In more animistic language, label-avoidance may be seen as a deception of the censor. Whereas the censoring agencies of the ego are put on the alert by such "dangerous" labels as "sex" or "aggression", their vigilance is relaxed when the situation is labeled "harmless".

It is the purpose of this study to suggest measures of label-avoidance and to test the hypothesis about the

relationship between repression and label-avoidance. If stimuli are arranged on a continuum from low to high as to the degree of association with aggression against a parent, these stimuli may be used to test the hypothesis of this study: subjects with strong repression of aggression toward a parent will tend to express aggression in response to stimuli that are lower on the continuum than the stimuli that elicit expression of aggression from subjects with relatively weak repression.

METHOD

Subjects.

The subjects were 113 male high school students ranging from 13 to 17 years of age². Members of minority groups were not included because of the difficulties involved in comparing their F scale scores with those of the majority group.

Measures of repressed aggression toward parents

The findings reported in the *Authoritarian Personality* (1) indicate that repressed aggression against the parents is one of the central characteristics of high scorers on the F scale. Accordingly, high scores on a modified and abbreviated version of the F scale were used as one of the indicators of repressed aggression. This scale consisted of 18 items — 15 items from the F scale, some of which were unchanged from the original and some which had been reworded by Horton (3) for use with high school students, and three items originated by Horton and included in his Fascism scale for high school students. The items chosen from the original F scale and from Horton's revision were those which seemed to have most relevance to parental aggression and to be most

² The authors wish to express their appreciation to the Superintendent of the Indianapolis Public Schools and to the Staff of Arsenal Technical High School for their assistance in conducting the experiment.

appropriate for high school students. We shall refer to the total score on these 18 items as the F score.

A scale measuring conformity values was used as the second measure of repression of parental aggression. The rationale for using this scale was based on Hoffman's (2) findings that high conformists tend to show a relatively high degree of repression of aggression against their parents. The Conformity scale consisted of 14 items such as "if we don't fit into a group we should try to change ourselves until we do fit." Five of these items were taken from Hoffman's study and reworded for high school students and nine were developed especially for this study. We shall refer to the total score on this scale as the C score.

Both tests permitted four response choices for each item: "agree", "undecided; probably agree", "undecided; probably disagree", and "disagree". These responses were scored 1, 2, 3, 4, respectively, or 4, 3, 2, 1, depending on the direction of the statement.

Measure of label-avoidance

Label-avoidance was measured with a projective technique developed by Weisskopf-Joelson. The materials consist of a series of 15 pictures. Each picture depicts an older and a younger man who are perceived as father and son by most subjects. The subjects were asked to tell a story about each picture. The pictures were planned in such a manner that each one permits the subject to tell either a story in which the son attacks the father or a "harmless" story without overt aggression. For example, one picture shows father and son seated at a dinner table. The son is holding a large knife which is pointed in the father's direction but also held above a roasted turkey. This picture is drawn in such a manner that it could be interpreted either as the son being about to attack the father or about to carve the turkey without, in

either case, doing injustice to the objective stimulus. The pictures ranged from scenes that elicit aggressive stories from almost all subjects to scenes that rarely elicit such stories. That is, the pictures vary on a continuum of the extent to which they carry the label of aggression against the father. Thus, label-avoidance would be manifested by not telling aggressive stories to the pictures that normally evoke aggressive stories and telling aggressive stories to the pictures at the other end of the series.

For purposes of establishing norms the data obtained from two groups of high school students were used. One group consisted of the 113 high school students who served as subjects for the present study and the other consisted of 74 high school students used in a preliminary investigation of the label-avoidance measure. For each picture the number of stories in which the son behaves in a physically aggressive manner toward the father was obtained. Scoring was done by Albrecht in accordance with a set of scoring rules. In order to check reliability, Weisskopf-Joelson scored 100 randomly selected stories. The agreement between the two scorers was 96 per cent. The pictures were ranked in the order of increasing number of aggression — against-father stories elicited by them.³

The degree to which a given subject tends to tell aggressive stories to non-aggressive pictures and vice versa was ascertained by three measures.

1. *The number of aggressive stories told to Pictures 1, 2, and 3.* Since Pictures 1, 2, and 3 carry the label of aggression to a lesser degree than the other pictures, the number of aggressive stories told to these pictures can be used as a measure of one

³ The correlation between the picture rankings found separately for the two subsamples of the norm group is .91. Therefore, it seemed justifiable to combine the two groups.

aspect of label-avoidance, namely of the tendency to tell aggressive stories to non-aggressive pictures. The first three pictures were selected as a basis for this measure because there is a sharp breaking point after Picture 3 in the number of aggressive stories told to each picture.

2. *The number of aggressive stories told to Pictures 13, 14, and 15.* Since Pictures 13, 14, and 15 carry the label of aggression to a higher degree than the other pictures, the number of aggressive stories told to these pictures can be used as a measure of one aspect of label-avoidance, namely of the tendency to avoid telling aggressive stories to pictures with obviously high aggressive content.

3. *The average aggression score.* Each picture was given a weight roughly proportional to the frequency of aggressive responses it elicited from the norm group. These weights were used as a quantitative measure of each picture's position on the "normative scale" ranging from Picture 1 to Picture 15. Subjects who tend to tell aggressive stories to pictures with low weights would tend to show high deviation from the "norm," i.e. high label-avoidance. The average aggression score was computed for each subject by adding the weights of the pictures to which aggressive stories were told and by dividing the sum by the total number of aggressive stories told by the subject. Thus, the average aggression score of each subject measures roughly the amount of deviation from the "norm" per aggressive story told.

Procedure

All tests were administered in one session, with the picture test preceding the two questionnaires. A booklet was distributed to each subject in the beginning of the session, with fifteen empty sheets for the fifteen stories of the picture test, followed by the mimeographed questionnaires. The pictures were presented to the subjects one at a time by projection

on a screen. The instructions were identical with those suggested by Murray for the TAT except that the subjects were requested to write their stories. Three minutes were allowed for each story. The pictures were presented in a gradually increasing order of aggressive labeling, i.e., the first picture presented (No. 1) was the one least likely to elicit stories of attack and the last picture (No. 15) the one most likely to elicit such stories. This order was used to minimize carry-over effects from the more highly aggressively labeled pictures to the pictures less so labeled.⁴ A brief intermission was introduced after the picture test. The subjects were not requested to give their names.

ANALYSIS AND RESULTS

It was predicted that Measure 1 of label-avoidance would be positively related to the F scores obtained on the modified scale and to the C scores obtained on the Conformity scale, and that Measures 2 and 3 would be negatively related to these scores.

The subjects were divided into four groups according to their F scores and C scores, namely $F+ C+$ (subjects above the median on both F scores and C scores), $F+ C-$ (subjects above the median on F scores and below the median on C scores), $F- C+$, $F- C-$. These four groups did not differ significantly from each other as to the average number of aggressive stories told to all pictures. This preliminary finding appears to supply a further justification of Measures 1 and 2 of label-avoidance. Since the four groups of subjects do not differ as to the average number of

⁴ The order was determined by a preliminary experiment in which the same pictures were administered to a similar group of subjects. The authors wish to express their appreciation to Dr. Homer Wood and to the Staff of Jefferson High School, Lafayette, Indiana, for their cooperation in conducting this experiment.

aggressive stories, any differences in the number of stories told to Pictures 1, 2, and 3 or to Pictures 13, 14, and 15 are more likely to be a function of the distribution of aggressive stories on the "normative scale" of pictures than of differences in the average number of aggressive stories.

All of the possible pairs among the four groups of subjects were compared as to their scores on the three measures of label-avoidance, by means of chi square, with contingency tables dichotomizing each group at the median score on each measure. In comparing the relative frequency of responses to Pictures 1, 2, and 3 (Measure 1) in the C+ groups, the hypothesis of no association was rejected. Subjects in the C+ F+ group tended to make more aggressive responses than did subjects in the C+ F- group (see Table I).⁵ In

TABLE I—Comparison of the C+ F+ group with the C+ F- group as to Measure 1 of label-avoidance (the number of aggressive stories told to Pictures 1, 2, and 3).

Frequency	C+ F+	C+ F-
Above median.....	12	2
Below median.....	21	21

$$X^2 = 4.63$$

P between .02 and .05

a similar test using the average aggression score (Measure 3), the hypothesis of no association was rejected in the C+ groups. Subjects in the C+ F+ group tended to have higher average aggression scores than subjects in the C+ F- group (see Table II).⁵ The other comparisons did not show any association of Measures 1, 2, or 3 with C scores or F scores.

DISCUSSION

The tests using Measures 1 and 3 lend some support to the hypothesis that label-avoidance is related to repression of aggression against the

TABLE II—Comparison of the C+ F+ group with the C+ F- group as to Measure 3 of label-avoidance (the average aggression score).

Frequency	C+ F+	C+ F-
Above median.....	10	14
Below median.....	23	9

$$X^2 = 4.54$$

P between .02 and .05

father. The tests using Measure 2 do not support this hypothesis.

Among the subjects with C scores above the median, high F scores are associated with high label-avoidance as measured by Measures 1 and 3. Since F scores and C scores are correlated,⁶ it can be expected that the C+ F+ group has higher C scores than the C+ F- group. This expectation was corroborated at the .01 level. Thus, the difference in label-avoidance between C+ F+ and C+ F- may be due to variation in C scores alone and/or to an interaction between F scores and C scores. If the former is the case, it might indicate that low label-avoidance (i.e. low repression of aggression) is associated with conformity scores in the median range, namely in the lower half of the C+ group rather than with low conformity scores. This assumption is supported by the fact that the C+ group and the C- group did not differ significantly from each other as to any one of the measures of label-avoidance. The following considerations make such results plausible: Clinical observation as well as Hoffman's (2) study suggest that many non-conformists may be people who use reaction-formation against high conformity; thus, they might show closer psychological resemblance to the high conformists than the subjects in the middle range of conformity.

Perhaps the positive as well as the

⁵ An analysis of variance supported the results obtained by means of chi-square.

⁶ When both scales are split at the median and the resulting 2x2 contingency table is analyzed by means of chi square, the relationship is significant at the 5 per cent level.

negative results of the comparisons with respect to Measures 1 and 3 can be explained as follows: Subjects with extremely high C scores show more label-avoidance than subjects with moderate C scores. The F scores show no observable relationship to label-avoidance, except to the extent that they correlate with the C scores. A positive relationship between C scores and label-avoidance and an absence of such relationship between F scores and label-avoidance could be clinically explained as follows: The high conformity scorers might be conceived as people who repress aggression against the father, and who have found no outlet for the repressed impulse. If the threat of such aggression is decreased by label-removal, it is possible for the aggression to be expressed. The high F scorers, on the other hand, are people who have diverted their repressed parental aggression into other channels. Thus, the release of pressure within the original channel through label-removal might less likely result in expression.

Measure 2, the number of aggressive stories told about Pictures 13, 14 and 15, does not show any relationship to label-avoidance. Only further research can determine whether this negative finding necessitates a modification in the hypothesis or whether it is an artifact of the present experimental design. Several subjects' comments in their stories to the most aggressive pictures suggest that these pictures are very obvious in their aggressive content and that failure to tell aggressive stories might often result from the conscious attempt "not to fall into the examiner's trap" rather than from unconscious repression. Moreover, since the two groups of subjects (C+ F+ and C+ F-) are equal as to the average number of aggressive stories and as to the number of aggressive stories told to Pictures 13, 14, and 15, and since the C+ F+ group exceeds the C+ F- group as to the number of aggressive

stories told to Pictures 1, 2, and 3, it can be concluded that the C+ F- group exceeds the C+ F+ group as to the number of aggressive stories told to Pictures 4 to 12.⁷ Such considerations and the positive result obtained with Measure 3 indicate that the findings of the study are in agreement with the hypothesis that repression of aggression correlates with both aspects of label-avoidance, namely with the tendency to tell aggressive stories to relatively non-aggressive pictures and to tell non-aggressive stories to relatively aggressive pictures.

In conclusion, the findings of the present study lend some support to the hypothesis that people who repress their aggression against the father to an extreme degree tend to express this aggression in "inappropriate" rather than in "appropriate" situations, i.e. they tend to use label-avoidance as defined in this paper. The study also indicates that the concept of label-avoidance might prove useful in the application of pictorial projective techniques. Further refinements may make it possible to use the degree of deviation as a measure of the degree of repression, not only with respect to aggression, but also with various other impulses.

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⁷ These pictures are too close together on "the normative scale" to warrant a further subdivision into two groups of pictures.

Relationships between Specific Rorschach Variables and Sociometric Data¹

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Recent attempts at validation of specific Rorschach factors have frequently yielded inconclusive and controversial results, particularly when overt behavior has been used as a validation criterion. The present investigation represents an attempt to use the overt behavior characteristics associated with high and low sociometric status for validation purposes. Jennings (5) has reported extensively on adolescent behavior characteristics associated with acceptance and rejection. These characteristics were obtained from direct behavioral observation. Jennings found that adolescents who were over-chosen by their peers in sociometric choice situations and who were considered as enjoying better than average social acceptance had a number of common personality attributes. High sociometric status adolescents could widen the social field for the participation of others by ingratiating them into activities, introducing new activities, and by fostering tolerance on the part of one member toward another. The socially accepted were also able to succeed in controlling their moods, at least to the extent of not inflicting negative feelings of depression or anxiety on others. They were able to establish rapport quickly and effectively with a wide range of other personalities and to win their confidence. The socially accepted appeared to possess to a greater or less degree an unusual capacity to identify with others to the extent of feeling solicitude for them. In contrast, the socially dejected adol-

escents appeared to be "self-bound" in terms of personality attributes, and were relatively unable to bridge the gap between their own personalities and those of other people. It seemed that at least certain of these personality characteristics found more frequently in the socially accepted adolescents could be used to test the validity of the hypotheses underlying a few selected Rorschach factors.

PRESENT PROBLEM

The present study is an attempt to compare selected Rorschach factors with behavior characteristics found by Jennings to be associated more frequently with socially accepted adolescents than with socially rejected ones. If the hypotheses underlying these Rorschach variables are tenable, there should be a significantly greater incidence of these variables in the socially accepted group.

Specific Rorschach variables which purport to give evidence on the hypothetical personality variables which are associated with social acceptance include:

- a. social identification (shown in the Rorschach variable "human response percentage") or H%;
- b. trends toward social conformity (shown in the Rorschach variable "popular response percentage") or P%;
- c. control of emotionality (shown in the Rorschach by an excess of form-color responses over color-form responses) or $FC > CF$;
- d. "tact" (shown in the Rorschach differentiated Fc response);
- e. "extratension" (shown in the Rorschach by a greater response to color rather than to move-

¹ This paper represents a portion of the dissertation presented in partial fulfillment of the requirements for the Ph.D. at the University of Pittsburgh. It was read at the Midwestern Psychological Association meetings in Chicago in 1953.

ment responses in the M:C ratio) or $\Sigma C > M$.

SUBJECTS AND METHODOLOGY

Initially a near-sociometric questionnaire was constructed and administered to nearly all of the tenth, eleventh, and twelfth grade students in two high schools. The subjects were asked to name three students in their home room groups as preferred companions in each of three sociometric choice situations. The questions were confined to the general area of leisure-time activities since high sociometric choice status may vary with different kinds of criterion situations. An example of the questions is: "Suppose you are planning a party at your home and have to limit the number of people you can ask to it. Which three members of your home room class would you invite?"

A roster of each home room class was obtained and a frequency tabulation made of the number of times each member was chosen by any other member as a companion for any or all of the criterion situations. Each person obtained a total sociometric choice frequency.

To evaluate the statistical significance of this frequency, Bronfenbrenner's (3) deviation from chance expectancy approach was used. In terms of his formulation (in which account is taken of the skewness associated with sociometric distributions), for statistical significance at the .05 level in the present situation where three choices were given on three criteria, the total number of choices needed for assignment to the accepted group was fifteen and above, while three or fewer choices were necessary for the rejected position.

From the original group, 98 socially accepted and 102 socially rejected adolescents who received significantly high or significantly low sociometric scores were chosen. The socially accepted and rejected groups were equated for sex, age, grade, intelligence, and prestige level of father's

occupation. Porter's (8) occupational rating scale specifically adapted for occupations frequently found in the Pittsburgh area was used. In this scale, the distribution of occupations was converted into stanines, with a stanine of one considered as a low prestige level and nine as a high one. Operationally those occupations that received stanine ratings of one to three were categorized into the low socioeconomic level, those that received ratings of four and five in the middle level, while those that received stanine ratings of six to nine were classified in the high socioeconomic level. Table I presents relevant data on the subjects used in the study.

The group Rorschach was administered, following the Harrower-Erickson and Steiner (4) procedure generally, but with certain minor adaptations made necessary for adequate use with this high school group.

The Rorschach protocols were scored by a combination of Klopfer (6) and Beck (2) procedures. To evaluate Rorschach scoring accuracy, twenty protocols were independently rescored by another psychologist using the same scoring schedule. When the number of responses scored the same was divided by the total number of responses scored, the agreement between scorers was 90 percent.

TREATMENT OF THE DATA AND RESULTS

The specific Rorschach variables were dichotomized at the median in the case of (a) H% and (b) P%. In the case of (c) FC greater than CF, (d) Fc responses and (e) a greater response to color in the M:C ratio, the dichotomy was in terms of presence or absence of the attribute. Chi-square, following Snedecor (9), was applied to the resultant frequencies. These are shown in Table II.

The hypotheses presented in this study were not found valid. None of the chi-squares is significant at the .05 level of confidence. Since it is known that the occurrence of the

TABLE I. Data Showing the Classification of Subjects in Terms of Sociometric Status, Sex, and Socioeconomic Level and the Equation of Subgroups on Age, Grade, and Intelligence.

Groups:	Low Socioeconomic Level		Middle Socioeconomic Level		High Socioeconomic Level		Totals
	N	Mean	N	Mean	N	Mean	
Male Accepted							
Age (months).....	12	202	24	202	11	202	47
Grade (years).....		10.9		10.9		10.6	
IQ (Otis).....		103		104		103	
Male Rejected							
Age (months).....	16	202	19	202	17	201	52
Grade (years).....		10.9		10.8		10.8	
IQ (Otis).....		104		103		105	
Female Accepted							
Age (months).....	18	202	17	201	16	200	51
Grade (years).....		10.9		10.8		10.6	
IQ (Otis).....		103		104		103	
Female Rejected							
Age (months).....	20	202	16	202	14	203	50
Grade (years).....		11.0		10.8		11.0	
IQ (Otis).....		103		104		103	
Totals	66		76		58		200

TABLE II. Chi-Square Values For the Incidence of Specific Rorschach Variables*

Groups	Rorschach Factor or Sign	Dichotomy	Chi- Square
Accepted versus rejected.....	Human Response Percentage	Median 19.98	.19
	Popular Response Percentage	Median 23.42	.01
	FC greater than CF	presence or absence	.59
	Fc	presence or absence	.78
	Extratension	presence or absence	1.65
	Number of Responses	Median 29.94	.08

* A chi-square of 3.841 is required for significance at .05 level of confidence, and 6.635 at the .01 level, with one degree of freedom.

specific Rorschach variables investigated in this study is at least partly a function of the number of responses (R), this response variable was dichotomized at the median, and its relationship to social acceptance was evaluated by chi-square. As shown in Table II, the obtained chi-square was not statistically significant.

CONCLUSIONS

In terms of the present research, no significant relationships were

found between certain Rorschach variables and social acceptance by others. The specific Rorschach variables were tested against the external criteria of overt behavioral characteristics rather than against other test data. As evidenced here, the adolescents with high social acceptance by their peers did not differ in terms of social identification, trends toward social conformity, in the control of emotionality, in "tact" or in "extratension". While the socially accept-

ed exhibited these attributes more frequently in behavioral characteristics, the specific Rorschach factors which purportedly give evidence on social identification, trends toward social conformity, etc., did not occur with greater frequency in the socially accepted group. The results of this study do suggest that clinical interpretations resting on the mechanical application of the hypotheses underlying the investigated Rorschach variables can only be made tenuously.

The personality characteristics that have been attributed to adolescents who have a high degree of social acceptance by their peers may reflect the higher level of emotional growth and maturity of this group, and a relatively greater freedom from personal and social problems and general self-concern. Research with paper and pencil questionnaires and problem inventories by Baron (1) and Kuhlen and Bretsch (7) for example substantiates this point of view. Additional Rorschach research with a small number of cases from both the accepted and rejected groups may throw additional light on this problem, particularly if global clinical evaluations of personal and social adjustment were

made from the Rorschach data.

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BOOK REVIEW

Krout, Maurice H., Ed. *Psychology, Psychiatry and the Public Interest*. Minneapolis: Univ. of Minn. Press, 1956, pp. vii + 216.

This is a timely book, just as Hunt's "The Clinical Psychologist" is timely. Their objective is peace. There has never been a period when tensions between psychiatrists and psychologists were so acute and when the public interest stood to suffer so much as a result. This compilation of papers devotes more attention to the disputed issues between the two professional groups than to the examination of the public interest, a kind of preoccupation which is one of the unfortunate consequences of hostility. In Part IV, however, the welfare of the public comes in for some direct consideration, and actually it is implicit in much of the other content.

Dr. Krout has assembled here statements from thirteen psychologists and one psychiatrist, a few of them representing their profession officially, more of them writing unofficially out of their own experience and reflections. In addition there are two "official" pronouncements. One is a statement by organized psychiatry, "Relations of Medicine and Psychology"; and the other is on "The role of the clinical psychologist as presently conceived by the Veterans' Administration program." The book is logically organized into four parts. The opening section defines the problem, the second gives the view of organized psychiatry, the third presents the ideas of individual psychologists who have worked closely with psychiatrists in the team situation, and the fourth gives expression to attitudes of "qualified" psychologists in private practice. The chapters for the most part are brief, and a clarifying statement of the "viewpoint" of the writer and a summary of the chapter's contents appear on the first page of each. It is a conveniently arranged book.

This volume would not be needed were it not for the recent increasing social acceptance of psychotherapy. Social sanction has come in this country earlier than in Britain, where the prevailing attitude still is that the Briton "holds himself together" without benefit of professional help. The rise of the non-medical therapist in the United States and the relation of this rise to World War II are examined in the opening section, as

is the disturbance in identity that has developed in both psychiatrists and psychologists as they find themselves "displaced persons" in this new therapeutic land concerning which there is as yet so little established knowledge.

It is in Part II that the meat of the psychiatrists' position is presented. The gist of it is a simple syllogism:

1. The treatment of illness is a medical responsibility.
2. Psychotherapy is a form of treatment of illness.
3. Therefore, psychotherapy is a medical responsibility.

It is the same old syllogism, coming down, as Dr. Huston says, "from ancient times." It is rigid and unalterable.

Although there are sharp differences in the levels at which the problems are examined in the various papers, the psychologists' treatment shows more variety, more freedom, more imagination than the psychiatrist's. Perhaps it is because they have more at stake. Or have they? In spite of considerable repetition, there are four points which stand out most vividly from the various contributions.

On one point there seems to be complete consensus, psychiatrists and psychologists alike: That there is good cooperation between individual members of the two professions on the operating level. As Collier puts it: "There is usually a harmonious relationship between clinical psychologists and psychiatrists." All the contributors agree on this, and certainly it is confirmed by the personal experience of many of us. "Some of our best friends are psychiatrists", and vice versa. This curious dissociation between personal experience and official professional position suggests that there is at the moment a kind of straw man that has been set up to bear the formal brunt of our competitions and antagonisms.

A second point on which there is agreement is that research is an acceptable activity for the psychologist. As Dr. Huston puts it: "It is in the area of research that psychology, with its scientific attitude, can function most productively." Between the two professional groups there is a little different flavor in the approval of this research role. The psychiatrist's applause has a little of the implication: "Research is O.K. for

these psychologists. It will keep them in their proper place, out of harm's way, out of mischief, out of psychotherapy." The psychologists' acceptance of this responsibility has more of the meaning: "This psychotherapy is such an unchartered business. What do we know about it? Why do some patients get better? Why do others not improve? How can we learn more about what all of us are doing and what is taking place in psychotherapy?" But in any case, both groups believe that research ought to be done and that more solid facts ought to be known. Some of the psychological contributors tend to play up psychology's research accomplishments as greater than they have been up to the present. Rogers certainly has been tireless in his research activities. But not many psychologists, especially those in private practice, are turning out significant research in psychotherapy.

The third point is a well-taken question raised by Yacorzynski and by Schwartz: Since we have no knowledge of how psychotherapy works, how do we know who is qualified to do it? How do we know exactly what method of training is best? What basis is there for saying that everyone needs a medical degree? They give the answer that we do not as yet know enough about the psychotherapeutic process to make dogmatic statements. The kind of evidence cited even for the effectiveness of a particular therapy is "no different from that offered by voodooism, yogaism, various religious cures, dianetics, Christian Science, and so on." In other words, the patient says he feels better (or worse) and the therapist believes him.

The last point is made with special force and clarity by Lindner and by May. It punctures the psychiatric syllogism. We are paying a high price, they argue, for a careless use of such labels as "sickness, illness, disease", thus encouraging the stereotype of the "medicine man", the "healer", the "magician". We know that "disease" consists of aberrant phenomena *within* individuals, while emotional and functional psychiatric disorders arise out of difficulties in the indi-

vidual's relations to others or to himself. Even the tranquilizing drugs we use work on a different principle from those which destroy invading germs or viruses in organic illnesses. They merely block off the painful effects of an emotional state but do not affect its course. Treatment differs from that of a disease. Things are done not *to* the patient, but *with* him, and in their doing he plays a major role. The last thing in the world we want in psychotherapy is for "the patient to be 'patient' as a sick person in the hospital is 'patient', calmly waiting for nature and the physician to perform the cure." If everyone would stop referring to emotional disorders as if they were disease entities, the age-old psychiatric syllogism would be knocked into a cocked hat. We need a new frame of reference and a new vocabulary. Psychotherapy is not a curative program or regimen imposed by medical imperatives. It is a process of learning. The patient is not "passive, plastic and compliant" as the physician would have him. He is an active participant. The interchange between patient and therapist is dynamic, mutual, interactive. These are the concepts which need to be substituted for some of what Lindner called our "sloppy semantics". Separate emotional disturbance and psychotherapy from the stereotypes, and much of the fury of the professional battle will subside.

This book is not only timely, but also useful. It clarifies many areas of agreement between the two professions. Everyone in both camps is "against sin" — that is, against the psychologists' invasion of the domain of organic sickness, against incompetence, against inadequate training, against quackery. Everyone verbally is for the patient. Add one more area of agreement — that everyone needs to learn more in theory and in practice about the process of psychotherapy for emotionally troubled people — and there will be less of strife and more of loyalty to the public interest.

RUTH S. TOLMAN

GENERAL NEWSLETTER

Roemer, Georg A. Observaciones sobre el Psicodiagnostico de Rorschach. *Revista de Psicología general y aplicada*, 1956, 11, 55-68. (Madrid)

A theoretical discussion of the meaning of a variety of Rorschach variables.

Leblanc, Maria. Adaptation Africaine et comparaison interculturelle d'une épreuve projective: Test de Rosenzweig. *Revue de Psychologie appliquée*, 1956, 6, 91-109.

Responses of 245 African children to the Rosenzweig P-F Test are compared with American findings. Statistically significant differences are presented.

Pichot, P.; Freson, V.; and Danjon, S. Le Test de Frustration de Rosenzweig (Forme pour enfants). Standardisation et étalonnage de la version Française. *Revue de Psychologie appliquée*, 1956, 6, 111-138.

Age norms on the French adaptation of the children's version of the Rosenzweig P-F Test with comparisons between French and American findings.

Kadinsky, David. Zum Problem der Bewegungsdeutungen im Rorschach. *Zeitschrift für diagnostische Psychologie*, 1956, 4, 218-237.

A discussion of the three kinds of movement response found in the Rorschach.

Zuberbier, Erika. Untersuchungen zur Konsistenz des graphischen Ausdrucks. *Zeitschrift für diagnostische Psychologie*, 1956, 4, 238-259.

A study of individual consistency of expressive movements as measured by handwriting, drawing of a tree, and drawings of designs. Five significantly consistent variables were found.

Canestrari, D.; and Minguzzi, G. F. "Z" Test e percezione sociale. *Zeitschrift für diagnostische Psychologie*, 1956, 4, 261-270.

Differences between Z-Test and Rorschach

results in a sample of 50 children's records are found and explained.

Ziolko, H. U. Farbpolyramidentest-Untersuchungen bei Neurotikern. *Zeitschrift für diagnostische Psychologie*, 1956, 4, 271-276.

Color Pyramid Test performances of 35 female neurotics show changes during therapy.

Hiltmann, Hildegard; Henck, Helmut; and Stark, Heinz-Dietrich. Der Fall, "Friedrich": hirnnorganisch und seelisch bedingtes dissoziales Verhalten. *Zeitschrift für diagnostische Psychologie*, 1956, 4, 277-296.

A case study of organic brain damage in an antisocial boy which utilizes the Color Pyramid Test, Z-Test, and TAT.

L'Abate, Luciano. Il linguaggio del fanciullo attraverso una tecnica proiettiva. *Bollettino di Psicologia e Sociologia applicate*, 1956, 13-16, 54-76. (Firenze).

A study of children's linguistic development by means of a projective test in which the child is presented a picture and selects another of a group of pictures which completes the idea, finally telling a story describing the sequence.

Ferracuti, F. and Rizzo, G. B. Analisi del valore discriminativo di alcuni segni di omosessualità rilevabili attraverso tecniche proiettive. *Bollettino di Psicologia e Sociologia applicate*, 1956, 13-16, 128-134. (Firenze).

Homosexual and heterosexual subjects are compared in their responses to the TAT, Rorschach, and human figure drawings.

Ferracuti, F. and Rizzo, G. B. Esame comparativo dei fattori di siglatura al Rorschach ed al Test di Howard. *Bollettino di Psicologia e Sociologia applicate*, 1956, 13-16, 135-141. (Firenze).

Rorschach and Howard Ink Blot performances of 20 subjects are so different as to preclude comparability of findings.

ANNOUNCEMENTS

WORKSHOPS

The Department of Psychology, University of Chicago, announces that Dr. S. J. Beck will be conducting his usual workshop in the Rorschach test, in the summer of 1957, the twenty-first consecutive year in which he is teaching these seminars. The first workshop, July 8-12, will be devoted to basic processes of the test and related problems. Principally, these are the scoring techniques and the methods for organizing the separate data into the whole personality construct. The second, July 15-19, will be devoted to advanced clinical interpretation focusing on two varieties of cases: the ego in acute benign reactions in adults; thinking and perception in malignant psychological trends in children. Both these personality patterns will be demonstrated from Rorschach test pictures as obtained from patients in these clinical groups.

For information, write to the Department of Psychology, University of Chicago, Chicago 37, Illinois.

S. J. BECK
University of Chicago

Western Reserve University announces again three Rorschach Method Workshops which will be conducted by Marguerite R. Hertz, Associate Clinical Professor of Psychology, in the 1957 Summer Session. Workshops are open to qualified psychologists, psychiatrists, research workers, psychiatric social workers, counsellors, and graduate students in clinical psychology having at least one full academic year's study or the equivalent. Persons in allied fields will be considered for acceptance on an individual basis.

Workshop I. June 10-14 inclusive. *Introduction to the Rorschach Method*

This will consist of lectures on the administration and scoring, oriented toward principles of interpretation. There will be demonstrations in the State Hospital and supervised training periods.

Workshop II. June 17-21 inclusive. *Intermediate Seminar*

This will consist of intensive discussion of scoring, principles of interpretation, and meaning of individual scores and score configurations. The potentialities and limits of content interpretation will also be con-

sidered with discussion of the major dynamics of the test situation and the interpersonal examiner-subject relationship. Rorschach records of normal children and adults as well as those presenting various types of disorders will be analyzed. There will also be demonstrations in the State Hospital.

Workshop III. June 24-28 inclusive. *Advanced Seminar*

This will consist of an advanced seminar in the dynamics of various clinical syndromes and the analysis of typical cases. Problems of differential diagnosis and research will be considered. There will also be intensive study of thematic interpretation and further consideration of the extra-Rorschach variables in the Rorschach testing situation.

Admission is limited to professional trained persons who have had at least one full year of experience with the Rorschach Method and who have attained some competence in its use.

For each Workshop, there are *all day sessions and one evening session*.

Each Workshop is *limited to 20 persons*. Dr. Hertz will conduct all seminars. The Fee is \$44.00 per Workshop.

One academic semester hour credit per Workshop will be given if desired upon registration and presentation of transcript of college record.

Application forms may be obtained from the Director of Admission, Western Reserve University, 2040 Adelbert Road, Cleveland 6, Ohio.

Applicants meeting the necessary requirements will receive notification of acceptance. A list of rooms and restaurants which are available on the campus within walking distance of the Psychology Building will be sent out one month prior to the Workshops. Reservations for living accommodations may be made in advance by writing directly to the names suggested on the list.

COMMITTEE MEMBERSHIP, SOCIETY FOR PROJECTIVE TECHNIQUES, 1956-57

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Further appointments and reappointments suggested by the Chairman to be discussed at Board Meeting.

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PROGRAM FOR ANNUAL MEETING

The program committee of the Society has plans for a number of symposia which will comprise the program for the annual meeting in August. Consequently there will be no presentations of individual papers.

RESEARCH EXCHANGE

This is going to be a new column in the *Journal of Projective Techniques*. Its purpose is to stimulate and expedite research in the area of projective diagnosis.

There are many clinicians who have excellent research ideas and too little time to carry them out. Thus, valuable ideas are lost or delayed in their presentation to the profession. Possibly such persons could be helped to make their contributions to the field if they were provided space in this column to describe their ideas. Such descriptions would enable others with more time to carry out the research. In this way collaboration between those with ingenuity and experience and those with time and less experience might make significant contributions to the field as a whole. This column could become a source of dissertation projects for graduate students.

In addition to the publication of research ideas the column could become an exchange for hard-to-get records, data, and control groups. For example, if someone needed for research purposes a sample of Rorschach of, let us say, cerebral palsied adolescents, he could put a "want-ad" in this column. On the other hand, if someone were in the possession of exceptionally interesting and rare data, he could advertise them here either for others' use or for some collaborative effort with interested persons.

We are now soliciting from interested readers the following kinds of communication for the next issue (deadline: May 1, 1957): (1)

descriptions of research ideas, (2) want-ads for rare records, (3) listings of rare records which might be lent to other psychologists, and (4) suggestions as to ways in which this column might be of service in facilitating research activities.

EDITH WEISSKOPF-JOELSON

Psychology Dept.
Purdue University
Lafayette, Indiana

Editorial Note:

The growth of theories and the piling up of research evidence occur at different levels and at different rates of speed. The research attitude involves distrust of speculative extrapolations beyond the proven and accepts only (and often, much too readily) concepts and relationships for which some empirical evidence is available.

This point of view has the unfortunate effect of creating a time lag between the development of a potentially productive hypothesis and the communicated knowledge which it might have stimulated. Many fertile ideas are lost and delayed unnecessarily because creative thinking moves faster than research findings but is communicated more slowly.

Dr. Weisskopf-Joelson has the Executive Editor's blessing in her attempt to decrease the lag between ideas and findings in projective research. We are prepared to allow her space for her column as long as it appears to accomplish this purpose.

Executive Editor

BERTRAM R. FORER

DIRECTORY OF MEMBERS OF THE SOCIETY FOR PROJECTIVE TECHNIQUES AND RORSCHACH INSTITUTE AS OF MARCH 1, 1957

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New York 28, N. Y. A 1942
- COHEN, William J. (Ph.D.)**
37 Colonial Park Drive
Springfield, Pa. A 1951
- ***COHN, Frederick E. (M.D.)**
77 E. Market Street
Rhinebeck, N. Y. A 1940
- COHN, Mrs. Ruth G.**
159 Liberty Road
Englewood, N. J. A 1946
- COLE, Joseph Carl (Ph.D.)**
Metropolitan State Hospital
Psychology Department
Norwalk, Calif. A 1949
- COLM, Hanna (Ph.D.)**
3 Overhill Road
Falls Church, Va. A 1944

- COLVIN, Ralph (Ph.D.)
Astor Home for Children
Rhinebeck, N.Y. A 1956
- COOK, Philip H. (Ph.D.)
Department of Labour and
National Service
Swanston Street
Melbourne, C.I. A 1941
Victoria, Australia F 1949
- COPEL, Sidney L.
5606 Wyndale Avenue
Philadelphia 31, Pa. A 1956
- *COWIN, Marion
433 West 21st Street
New York 11, N.Y. F 1940
- COX, Grace B.
Psychological Services
Bureau of Mental Health
Harrisburg, Pa. A 1950
- COX, Rachel Dunaway (Ph.D.)
503 Walnut Lane A 1950
Swarthmore, Pa. F 1952
- CRAIN, William
1781 Westmont Drive
Anaheim, Calif. A 1955
- CRASILNECK, Harold B.
University of Texas (Ph.D.)
Southwestern Medical
School
5323 Harry Hines Blvd.
Dallas, Texas A 1956
- CRILE, Mrs. Mary
Big Sur, Calif. A 1945
- CROVETTO, Lorraine
703 Carondelet Street
New Orleans 12, La. A 1953
- CRUMPTON, Evelyn (Ph.D.)
1451 1/2 Barry Avenue
Los Angeles 25, Calif. A 1955
- CUMMINGS, C. Peter (Ph.D.)
626 Swede Street
Norristown, Pa. A 1954
- CUNNINGHAM, Mrs. Cornelia
100 Chesney Lane
Philadelphia 18, Pa. A 1950
- DANA, Richard H. (Ph.D.)
University of
Wisconsin—Milwaukee
3203 N. Downer
Milwaukee 11, Wisc. A 1956
- D'ANGELO, Rita Y.
2604 University Avenue
Bronx 68, N.Y. A 1955
- DAVENPORT, Beverly (Ph.D.)
Veterans Adm. Hospital
American Lake, Wash. A 1949
- DAVID, Henry P. (Ph.D.)
Dept. Institutions
and Agencies
State of New Jersey
135 W. Hanover Street
Trenton 25, N.J. A 1953
- DAVIDSON, Aene (Ph.D.)
280 Melbourne Road
Great Neck, N.Y. A 1953
- *DAVIDSON, Helen H. (Ph.D.)
425 Riverside Drive
New York 25, N.Y. F 1940
- DAVIS, John A. (Ph.D.)
2444 Archwood Drive
Dayton 6, Ohio A 1955
- DAVISON, Arthur H. (Ph.D.)
V.A. Hospital
2615 Clinton Avenue A 1952
Fresno 3, Calif. F 1953
- DERI, Mrs. Susan K.
235 W. 76th Street A 1948
New York 23, N.Y. F 1950
- DERNER, Gordon F. (Ph.D.)
Department of Psychology
Adelphi College A 1949
Garden City, N.Y. F 1951
- DE VAULT, Mrs. Barbara Allen
U.S. Educational Comm.
for France
9 Rue Chardin
Paris 16e, France A 1953
- DE VAULT, Helen C.
593 33rd Street A 1950
Manhattan Beach, Calif.
- DE VILLIERS, David Z.
University College
Fort Hare
Union of South Africa A 1953
- DIAMOND, Mrs. Florence
135 Sierra View Road
Pasadena 2, Calif. A 1950
- DIAMOND, Mrs. Gertrude S.
1328 Sage Street
Far Rockaway, N.Y. A 1948
- DIANA, Pearl Butler (Ph.D.)
304 N. Park Street A 1949
Crown Point, Ind. F 1951
- DINGMAN, Paul R. (Ph.D.)
Child Guidance Center
500 Garver Building
Des Moines, Iowa A 1950
- DOMINGUEZ, Kathryn (Ph.D.)
126 Tyson Road
Newtown Square, Pa. A 1943
- DORKEN, Herbert, jr. (Ph.D.)
Mental Health Division
Department National
Health & Welfare
602 Jackson Bldg.
Ottawa, Ont., Canada A 1949
F 1951
- DOUGHERTY, Mrs. Margaret R.
1804 Roselynn Avenue
Scranton 10, Pa. A 1944
- DOWLEN, Mrs. Caroline
5202 Pomander
Houston 21, Texas A 1956
- DRYSELUS, Harold
601 S. Gramercy Place
Los Angeles, Calif. A 1950
- DUDEK, Mrs. Stephanie Z.
258 W. 22nd Street
New York 3, N.Y. A 1949
- DUE, Floyd O. (M.D.)
370 29th Street
Oakland 9, Calif. A 1943
- DUFRESNE, Georges
49 Spring Grove Crescent
Outremont, near Montreal
Canada A 1954
- DUNLAP, Dorothy
Agnew State Hospital
Agnew, Calif. A 1954
- DUNN, Michael B. (Ph.D.)
Devereux Ranch
School
Santa Barbara, Calif. A 1941
F 1943
- *EARL, C. J. C. (F.R.C.P.I.)
2 Dale Drive
Stillorgan, County Dublin
Ireland F 1940
- EGLASH, Mrs. Evelyn
1100 State Street
La Crosse, Wisconsin A 1953
- EIDUSON, Mrs. Bernice T.
941 Stonchill Lane (Ph.D.)
Los Angeles 49, Calif. A 1949
- EISNER, Betty G. (Ph.D.)
530 Gretna Green Way St. Aff.
Los Angeles 49, Calif. 1955
- ELDRED, Donald M.
Psychology Department
Vermont State Hospital
Waterbury, Vt. A 1948
- ELIZUR, Abraham (Ph.D.)
6 Tel Hai Street
Tel Aviv, Israel A 1949
- ELLIOTT, Merle H. (Ph.D.)
1025 Second Avenue
Oakland 6, Calif. A 1944
- ELLIS, Albert (Ph.D.)
Parc Vendome
333 W. 56th Street
New York 19, N.Y. A 1950
- *EMERY, Margaret
43 Fifth Avenue
New York, N.Y. F 1940
- ENOCHS, Neil
366 Marie Avenue St. Aff. 1954
Los Angeles 42, Calif.
- EPHRON, Beulah K. (Ed.D.)
40 E. 10th Street
New York 3, N.Y. A 1949
- EPSTEIN, Hans L. (Ph.D.)
722 W. 176th Street
New York 33, N.Y. A 1944
- ERICSON, Mrs. Helen
11844 E. Deana Street
El Monte, Calif. Aff. 1954
- ERON, Leonard D. (Ph.D.)
Rip Van Winkle Foundation
454 Warren Street
Hudson, N.Y. F 1955
- ESTRADA, Mrs. Carol Griffin
Psychology Department
Colorado State Hospital
Pueblo, Colorado A 1951
- EVANS, John T. (Ph.D.)
85 Otis Street
Newtonville 60, Mass. A 1951
- EVANS, Ray B.
2915 Rimpau Boulevard
Los Angeles 16, Calif. A 1954
- EVERETT, Evalyn G. (Ph.D.)
Box 51
Napa State Hospital
Imola, Calif. A 1953
- FARBEROW, Norman L. (Ph.D.)
4211 Holly Knoll Drive
Los Angeles 27, Calif. A 1949
- FARLEY, Julie (M.D.)
418 Northway
Baltimore, Md. A 1949
- FATERSON, Hanna F. (Ph.D.)
27 Jane Street
New York 14, N.Y. A 1943
F 1946
- FEHRENBACH, Mrs. Alice
181 Magnolia Street
Denver 20, Colo. A 1951
- FEIFEL, Herman (Ph.D.)
VA Mental Hygiene Clinic
1031 S. Broadway A 1943
Los Angeles 15, Calif. F 1956
- FEINBERG, Henry
15886 La Salle
Detroit, Mich. A 1949
- FELDBERG, Theodore M. (M.D.)
11 E. Chase Street
Baltimore 2, Md. A 1944
- FELDMAN, Dorothy A. (Ph.D.)
5225 Ellsworth Avenue
Pittsburgh 32, Pa. A 1952
- FELDMAN, Irving (Ph.D.)
141 Bodman Place
Red Bank, N.J. A 1953
- FELZER, Stanton B., (Ph.D.)
1922 B. Humphrey
Merry Way
Elkins Park 17, Pa. A 1954
- FERGUSON, Kingsley G. (Ph.D.)
Psychology Department
Westminster Hospital
London, Ontario, Can. A 1954

- FERRACUTI, Franco (M.D.)
Faculty of Social
Sciences, University
of Puerto Rico
Rio Piedras, P. R. A 1954
- FICHMAN, Lionel L.
241 South Sepulveda Blvd.
Los Angeles 49, Calif. St. Aff. 1954
- FIKE, Mrs. Irene A
271 Nelson Road
Scarsdale, N. Y. A 1941
- FILMER-BENNETT, Gordon
(Ph.D.)
Norfolk State Hospital
Norfolk, Nebraska A 1954
F 1956
- FILS, David H. (Ph.D.)
Los Angeles County
Supt. of Schools Office
808 N. Spring Street
Los Angeles, Calif. A 1954
- FINE, Harold J. (Ph.D.)
VA Mental Hygiene Clinic
355 Fairfield Avenue
Bridgeport, Conn. A 1955
- FINE, Reuben (Ph.D.)
225 W. 86th Street
New York 24, N. Y. A 1949
F 1954
- FINN, Michael H. P. (Ph.D.)
1302 Burleigh Road
Orchard Hills,
Lutherville, Md. A 1954
- FISCHER, Liselotte K. (Ph.D.)
615 North Wolfe Street
Baltimore 12, Md. A 1949
- FLEMMING, Edward L. (Ed.D.)
1058 1/2 Lakeview Road East
Jacksonville 11, Fla. A 1954
- FONT, Marion McKenzie
627 S. Carrollton Ave.
New Orleans 13, La. A 1942
F 1947
- FORER, Bertram R. (Ph.D.)
2170 Live Oak Drive E.
Los Angeles 28, Calif. A 1949
F 1951
- FORER, Lucille K. (Ph.D.)
2170 Live Oak Drive E.
Los Angeles 28, Calif. A 1953
- FORREST, Mrs. Carol W.
55 West 11th Street
New York, N. Y. A 1951
- FORTIER, Robert H. (Ph.D.)
151 Locust Avenue
Springfield, Pa. A 1956
- *FOSBERG, Irving A. (Ph.D.)
1516 Arabella Street
New Orleans 15, La. A 1940
F 1949
- FOSTER, Austin (Ph.D.)
The Psychopathic Hospital
University of Texas
Medical Branch A 1950
Galveston, Texas F 1955
- FRAMO, James L., Jr. (Ph.D.)
2130 MacLerie Lane
Broomall, Pa. A 1955
- FRANCOEUR, Thomas A.
1070 Crevier Avenue (Ph.D.)
Ville St. Laurent
Prov. Que., Canada Aff. 1954
- FRANK, Lawrence K.
Ashland, N.H. H.M. 1954
- FRANKEL, Esther B. (Ph.D.)
Child Guidance Clinic
Children's Hospital
420-22 Cherry Street
San Francisco 18, Cal. A 1953
- *FRANZETTI, Mrs. Rosa
Padlina de
"El Silencio" Bloque 6-C-4
Caracas, Venezuela A 1940
- FREAR, Edgar
Montrose, Pa. A 1950
- FREY, Mrs. Harriet K.
59 Francisco Avenue
West Caldwell, N. J. A 1953
- FRIEDMAN, Alice (Ph.D.)
780 Madison Avenue
New York 21, N. Y. A 1951
- FRIEDMAN, Mrs. Gladys Miller
2860 Van Aken Blvd.
Cleveland 20, Ohio A 1949
- FRIEDMAN, Howard (Ph.D.)
316 Southfield Drive
Fayetteville, N. Y. A 1951
- FRIEDMAN, Ira (Ph.D.)
2860 Van Aken Boulevard
Cleveland 20, Ohio A 1954
- FRIEND, Mrs. Jeannette G.
16 Greenough Circle
Brookline 46, Mass. A 1949
- FRISCH, Paul Z. (Ph.D.)
Psychology Department
Adelphi College
Garden City, N.Y. F 1956
- *FROMM, Erika O. (Ph.D.)
5717 S. Kenwood
Chicago 37, Ill. A 1940
- FROSTIG, Marianne (Ph.D.)
1023 North Fairfax Avenue
Los Angeles 46, Calif. A 1956
- FRY, Franklyn D.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952
- FRY, Mrs. Martha O.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952
- FUCHSMAN, Seymour H.
288 Lexington Avenue
New York 16, N.Y. A 1944
- GARDNER, Mrs. Ann K.
2569 Berkshire Road
Cleveland 6, Ohio A 1942
- GASOREK, Kathryn
30 E. Elm Street
Linden, N. J. A 1949
- GASTON, Charles O.
University of Texas
Medical Branch
Galveston, Texas St. Aff. 1955
- *GAUDET, E. Louise (Ph.D.)
210 W. 70th Street
New York 23, N. Y. F 1940
- GAUDET, Frederick J. (Ph.D.)
210 W. 70th Street
New York 23, N. Y. A 1949
- GEIL, George A.
915 Kings Avenue
Springfield, Mo. A 1943
- *GERING, Mrs. Evelyn E.
18063 Valley Vista Blvd.
Fucino, Calif. A 1940
- GERSTEN, Charles (Ph.D.)
1821 Grandin Street S.W.
Roanoke, Va. A 1949
- GETOFF, Louis
251 West 89th Street
New York 24, N.Y. A 1956
- GIBBY, Robert G. (Ph.D.)
1220 Jeffras Avenue
Marion, Ind. A 1954
F 1955
- GILBERT, Raymond R.
32 Halifax Street
Boston 30, Mass. A 1951
- GILLENSON, Gertrude N.
See Brody, Gertrude G. (Ph.D.)
- GILLMAN, Mrs. Etta C.
16 Stevenson Avenue
Hartsdale, N. Y. A 1944
- GLASS, Blanche (Ph.D.)
Box W
Newtown, Conn. A 1955
- GOLDBERGER, Leo
Research Center for
Mental Health
New York University
21 Washington Place
New York 5, N.Y. A 1956
- GOLDFARB, William (M.D.)
530 West End Avenue
New York 31, N. Y. A 1941
F 1944
- GOLDSTEIN, Dr. Fred J.
Pinel Foundation
2318 Ballinger Way
Seattle 55, Wash. A 1956
- GOLICK, Mrs. Margaret
944 Dunlap Avenue
Outremont, Quebec, Canada A 1953
- GONDOR, Mrs. Lily H.
320 East 57th Street
New York 22, N. Y. A 1949
F 1952
- GOODMAN, Harvey (Ph.D.)
97 Cedarhurst Avenue
Cedarhurst, N. Y. A 1954
- GOODMAN, Morris (Ph.D.)
3 Wellington Road
Livingston, N. J. A 1953
- GOODNICK, Benjamin (Ph.D.)
Administration Building
Parkway and 21st
Philadelphia 3, Pa. A 1956
- GOOLISHIAN, Harold A. (Ph.D.)
1008 Camp Circle West
La Marque, Texas A 1952
- GORDON, Dr. Edward M.
39-A E. 72nd Street
New York 21, N. Y. A 1955
- GORDON, Thelma
307 W. 11th Street
New York 14, N. Y. A 1951
- GOTTLIEB, Mrs. Sophie B.
225 W. 86th Street
New York 24, N. Y. A 1943
- GRAHAM, Virginia T. (Ph.D.)
General Hospital, N-3
Cincinnati 29, Ohio A 1953
- GRASSI, Joseph R.
Bowman-Gray School of Med.
Wake Forest College
Winston-Salem, N. C. A 1942
- GRAVES, Winifred S. (Ph.D.)
4242 Cornelius Ave.
Indianapolis 8, Ind. A 1948
F 1951
- GRAVITZ, Melvin A. (Ph.D.)
5014 Bradley Boulevard
Chevy Chase 15, Md. A 1956
- GRAYSON, Harry M.
12640 Oxnard Street
North Hollywood, Calif. A 1951
- GREENBERG, Nathan
5447 Jeanne Mance Street
Montreal, Quebec
Canada St. Aff. 1954
- GREENBERG, Pearl (Ph.D.)
25 W. Henry Street
Linden, N. J. A 1951
- GREENE, Janet S. (Ph.D.)
65 E. 76th Street
New York 21, N. Y. A 1953
- GREENSTADT, William M.
35 E. 30th Street St. Aff. 1954
New York, N. Y. A 1955
- GRIER, Mary E. (Ph.D.)
2910 Ludlow Road, #14
Cleveland 20, Ohio A 1956
- GROFF, Marne L. (Ph.D.)
QTRS "G"
US Naval Shipyard
Pearl Harbor, T.H. A 1952
- GROSSMAN, Mrs. Marc J.
16950 S. Woodland Road
Shaker Heights 20, O. A 1949

- GROSSMAN, Searles A. (Ph.D.)**
23 Kensington Lane A 1951
Brookside, Newark, Del. F 1954
- GUERTIN, Wilson H. (Ph.D.)**
Box 635 A 1950
Perry Point, Md. F 1953
- GUNDON, Jeannine**
39 Ouest Gouin Blvd.
Montreal, Que., Can. A 1951
- GUNDLACH, Ralph (Ph.D.)**
162 East 80th Street
New York 21, N. Y. A 1951
- GUREVITZ, Saul (Ph.D.)**
680 West End Avenue
New York 25, N. Y. A 1949
- GURVICH, Mrs. Bernice M.**
251 Willis Avenue
Hawthorne, N. Y. A 1950
- GURVITZ, Milton S. (Ph.D.)**
108 Hampshire Road A 1948
Great Neck, N. Y. F 1951
- GUY, William**
Springfield State Hospital
Sykesville, Md. A 1953
- HABER, Wm. B. (Ph.D.)**
275 Central Park West
New York 24, N. Y. A 1953
- HAINES, Miriam S. (Ph.D.)**
166 Morse Place
Fingewood, N. J. A 1951
- *HALLOW, William C. (Ph.D.)**
515 S. Fifth Avenue
Lebanon, Pa. A 1940
- *HALLOWELL, A. Irving (Ph.D.)**
Box 14, Bennett Hall
Univ. of Pennsylvania A 1940
Philadelphia 4, Pa. F 1944
- HALLOWELL, Dorothy K.**
3318 Midvale Avenue (Ph.D.)
Philadelphia 29, Pa. A 1947
- HALPERIN, Sidney L. (Ph.D.)**
Paliiki Place
Kaneohe, Hawaii A 1949
- HALPERN, Esther**
Mental Hygiene Institute
531 Pine West
Montreal, Canada St. A# 1954
- HAMMER, Emanuel F. (Ph.D.)**
685 West End Avenue
New York 25, N. Y. A 1953
- HAMMOND, Mrs. Eleanor**
R.D. 2
New Hope, Pa. A 1947
- HAND, Dr. Mary Ella**
432 Hamilton Place
Ann Arbor, Mich. A 1948
- HANDEL, Gerald**
Social Research, Inc.
145 East Ohio Street
Chicago 11, Ill. A 1954
- HANFMANN, Eugenia (Ph.D.)**
c/o Dr. Helen Beier
375 Harvard Street A 1948
Cambridge, Mass. F 1950
- HARRIS, Albert J. (Ph.D.)**
Educational Clinic
Queens College
Flushing, N. Y. A 1951
- HARRIS, June**
Bureau of Child Guidance
228 E. 57th Street
New York 22, N. Y. A 1941
- HARRIS, Robert A. (Ph.D.)**
Psychology Department
Brooklyn College
Brooklyn 10, N. Y. A 1954
- HARRIS, Robert E. (Ph.D.)**
The Langley Porter Clinic
University of California
Medical Center
San Francisco 22, Calif. A 1948
- HARRIS, William W.**
210 E. 181st Street
Bronx, N. Y. A 1949
- *HARROWER, Molly R. (Ph.D.)**
55 E. 86th Street
New York 28, N. Y. F 1940
- HARTZLER, Ethel N.**
Superintendent's Office
Northumberland County
Public Schools
Court House Annex
Sunbury, Pa. A 1951
- HAWKINS, Mrs. Hermione**
Garrison Forest Road
Owings Mills, Md. A 1951
- HAYS, Berta**
235 So. Kenmore Ave., #102
Los Angeles 4, Calif. A 1949
- HEATH, Douglas (Ph.D.)**
Haverford College
Haverford, Pa. A 1956
- HEBERT, Bernard**
P.O. Box 614
Digby, Nova Scotia, Can. A 1955
- HEISLER, Verda (Ph.D.)**
1541 Eighth Avenue
San Diego, Calif. A 1951
- HELLERSBERG, Elisabeth F.**
641 Whitney Avenue (Ph.D.)
New Haven, Conn. A 1949
- HEMMENDINGER, Larry**
1026 Park Avenue (Ph.D.)
Bridgeport, Conn. A 1950
- HENRY, William E. (Ph.D.)**
5835 Kimbark Avenue A 1948
Chicago, Ill. F 1956
- HERNESS, Mrs. Christina**
Amherst H. Wilder Child
Guidance Clinic
670 Marshall Avenue
St. Paul 4, Minn. A 1952
- *HERTZ, Marguerite R. (Ph.D.)**
2835 Drummond Road
Shaker Heights, Ohio F 1940
- *HERTZMAN, Max (Ph.D.)**
Department of Psychology
College of City of N. Y. A 1940
New York, N. Y. F 1946
- HIGBEE, Dale S. (Ph.D.)**
VA Hospital
Salisbury, N. C. A 1955
- HIGGINSON, Gordon K. (Ph.D.)**
6040 N. Montana
Portland, Ore. A 1954
- *HILDEN, Arnold H. (Ph.D.)**
628 Clark Avenue A 1940
Webster Groves 19, Mo. F 1943
- HILKEVITCH, Rhea R. (Ph.D.)**
5715 Kenwood
Chicago 37, Ill. A 1954
- HILLSON, Joseph (Ph.D.)**
Norfolk State Hospital
Norfolk, Neb. A 1956
- HIMELSTEIN, Philip. (Ph.D.)**
114 Tansyl Drive
San Antonio, Texas A 1956
- *HIRNING, L. C. (M.D.)**
R.F.D. #1
Katonah, N.Y. F 1940
- HIRSCH, Mrs. Janet F.**
67-49 C 192nd Street
Fresh Meadows 65, N.Y. A 1948
- HOCH, Erasmus L. (Ph.D.)**
125-16 Rosebud Drive
Rockville, Md. A 1954
- HOCKER, Mrs. Margaret W.**
220 Reilly Street
Harrisburg, Pa. A 1951
- HOLMES, Frances B. (Ph.D.)**
R.D. 2, Harwinton
Torrington, Conn. A 1950
- HOLODNAK, Helen Barbara**
31-38-36th Street
Astoria 3, L. I., N. Y. A 1949
- HOLT, James M. (Ph.D.)**
3816 Bledsoe
Los Angeles 66, Calif. A 1956
- HOLT, Robt. R. (Ph.D.)**
N.Y.U. Research Center for
Mental Health
21 Washington Place A 1948
New York 3, N. Y. F 1951
- HOLZBERG, Jules D. (Ph.D.)**
Box 551 A 1949
Middletown, Conn. F 1954
- HORLICK, Reuben S. (Ph.D.)**
3004 N. Stuart Street
Arlington 7, Va. A 1951
- HOUC, Dorothy**
220 E. 12th Street
New York, N. Y. A 1952
- HOUSMAN, Harold S. (Ph.D.)**
2550 Ivanhoe Drive
Pontiac, Mich. A 1954
- HOWARD, J. W. (Ph.D.)**
Route 2
Rigaud, P.Q., Canada A 1954
- HOWARD, Stephen J.**
3601 Marcia Drive St. A# 1954
Los Angeles 26, Calif.
- HOWLAND, Allan O.**
Administration Building
State Hospital
Norristown, Pa. A 1951
- HUGHES, Robert M. (Ph.D.)**
Suite 101
849 Peachtree St., N.E. A 1944
Atlanta 8, Ga. F 1954
- HUTT, Max L. (Ph.D.)**
Department of Psychology
University of Michigan A 1947
Ann Arbor, Mich. F 1952
- IMRE, Paul**
Spring Grove State Hospital
Catonsville 28, Md. A 1954
- INMAN, John M.**
1310 La Loma Avenue
Berkeley 8, Calif. A 1945
- IVERSON, Norman E. (Ph.D.)**
Suite 213
2021 North Central Avenue
Phoenix, Arizona A 1956
- IVES, Margaret (Ph.D.)**
St. Elizabeths Hospital A 1953
Washington 20, D.C. F 1955
- JACOBS, Martin E. (Ph.D.)**
27 Radial Lane
Levittown, N. Y. A 1955
- *JACOBY, Julia**
R.D. 3
Lincoln, Nebr. A 1940
- JAHOBA, Hedwig (Ph.D.)**
500 W. 235th Street
New York 63, N. Y. A 1952
- JEFFREYS, Alvia W., Jr. (Ph.D.)**
Western State Hospital
Staunton, Va. A 1952
- JEFFRIES, Mrs. Helen**
14 East Sixth Street
Media, Pa. A 1956
- JENSEN, Arthur R. (Ph.D.)**
Maudsley Hospital
Denmark Hill
London, England A 1956
- JOEL, Walther (Ph.D.)**
9629 Brighton Way A 1946
Beverly Hills, Calif. F 1950
- JOHNSON, Elizabeth Z.**
VA Hospital (Ed.D.)
Lexington, Ky. F 1956
- JOHNSON, Richard B.**
Bureau of Child Guidance
362 Schermerhorn Street
Brooklyn 17, N.Y. A 1953

- JOHNSON, Theresa**
229 S. Maple Drive
Beverly Hills, Calif. A 1949
- JOSEPH, Alice (M.D.)**
Garrison-on-Hudson
New York A 1944
- JOSEY, William E.**
11905 Heritage Lane
Houston, Texas A 1949
- *JUNKEN, Elizabeth M. (Ph.D.)**
468 Lydecker Street
Englewood, N. J. A 1940
- KABACK, Goldie R. (Ph.D.)**
375 Riverside Drive
New York 25, N. Y. A 1950
- KADINSKY, D.**
8 P. Smolenski Street
Tel Aviv, Israel A 1946
- KADIS, Mrs. Asya L.**
1060 Park Avenue
New York 28, N. Y. A 1944
- KAHN, David F. (Ph.D.)**
Lexington School for Deaf
904 Lexington Avenue
New York 21, N. Y. A 1953
- KAHN, Marvin W. (Ph.D.)**
University of Colorado
Medical School
4200 E. 9th Avenue
Denver, Colo. A 1956
- KAHN, Maj. Theodore C. (Ph.D.)**
2750 USAF Hospital
Wright-Patterson
AF Base, Ohio A 1953
F 1954
- KALANT, Mrs. Lee**
1911 Coonet Street
Montreal 26, Canada A 1954
- KALINKOWITZ, Bernard N.**
Graduate School of
Arts and Science
New York University
Washington Square
New York, N. Y. A 1954
- KALIS, Betty Lee (Ph.D.)**
Langley Porter Clinic
San Francisco 22, Cal. A 1956
- KAPIT, Milton E.**
1 W. 85th Street
New York 21, N. Y. A 1950
- KAPLAN, Henry K.**
Mendota State Hospital
Madison, Wis. A 1956
- KAPLAN, Herbert**
Patricia Avenue
Fishkill, N. Y. A 1949
- KAPLAN, Norman (Ph.D.)**
2117 "E" Street, N.W.
Washington 7, D.C. A 1949
- KASS, Walter (Ph.D.)**
Department of Psychiatry
Albert Einstein College
of Medicine
New York 61, N. Y. F 1955
- KATES, Solis L. (Ph.D.)**
University of Massachusetts
Amherst, Mass. A 1949
- KATZ, Mrs. Florine**
87 East 82nd Street
New York 28, N. Y. A 1953
- KATZ, Mrs. Harriet**
142 West Stella Lane
Phoenix, Arizona A 1950
- KAUFMANN, Elizabeth M.**
414 W. 121st Street
New York 27, N. Y. A 1950
- KAYKEWITZ, Henry (Ph.D.)**
1060 Union Street
Brooklyn 25, N. Y. A 1955
- *KELLEY, Douglas M. (M.D.)**
44 Highgate Road
Berkeley 7, Calif. F 1940
- KELLMAN, Samuel**
17606 Prairie
Detroit 21, Mich. A 1949
- KELSEY, Howard Phelps**
1252 Fourth Street
Sarasota, Fla. A 1944
- *KEMPLE, Camilla**
20 W. 86th Street
New York 24, N. Y. A 1940
F 1946
- KENDIG, Isabelle V. (Ph.D.)**
Ashton, Md. A 1944 F 1946
- KESSLER, Mabel G. (Ph.D.)**
Montgomery County
Public Schools
Court House
Norristown, Pa. A 1952
- KEW, Clifton E.**
32 Gramercy Park So.
New York 5, N. Y. A 1949
- KIDORF, Irwin W.**
7 Preston Court
Lexington, Ky. St. Aff. 1955
- KING, Francis W. (Ph.D.)**
31 York Terrace
Brooklyn 46, Mass. A 1952
- KINGSLEY, Dr. Leonard**
Walter Reed Army Hospital
Wash. 12, D.C. St. Aff. 1954
- KIRK, Virginia (Ph.D.)**
Vanderbilt University
School of Medicine
Nashville 5, Tenn. A 1944
- KITAY, Philip M. (Ph.D.)**
8707-35th Avenue
Jackson Heights 72, N. Y. A 1955
- KLASS, Walter K. (Ph.D.)**
North Central College
146 N. Sleight Street
Naperville, Ill. A 1946
- KLATSKIN, Ethelyn H. (Ph.D.)**
Yale University
Child Study Center
333 Cedar Street
New Haven 11, Conn. A 1946
F 1955
- KLEIN, Abraham**
433 W. 21st Street
New York 11, N. Y. A 1955
- *KLEIN, Eva L. (M.D.)**
1148 Fifth Avenue
New York 28, N. Y. A 1940
- KLEIN, George S. (Ph.D.)**
Research Center for
Mental Health
21 Washington Place
New York 3, N. Y. F 1956
- KLEINBERG, Mrs. Rosalyn K.**
6606 N. 11th St.
Philadelphia 26, Pa. A 1950
- *KLOPPER, Bruno (Ph.D.)**
Box 2971
Carmel, Calif. F 1940
- KLOPPER, Walter G. (Ph.D.)**
Norfolk State Hospital
Norfolk, Nebr. A 1946
F 1951
- KNAPP, Pearl G. (Ph.D.)**
8770 W. Whitworth Drive
Los Angeles 35, Calif. F 1956
- KORDA, Mrs. Geraldine J.**
80 S. Parkwood Avenue
Pasadena 10, Calif. A 1949
- KORNER, Anneliese F. (Ph.D.)**
2255 Post Street
San Francisco 15, Calif. F 1953
- KORNREICH, Melvin (Ph.D.)**
147-10-84th Road
Jamaica 35, N. Y. A 1951
- KOTKOV, Benjamin (Ph.D.)**
4 Country Hill
West Brattleboro, Vt. A 1949
- *KRAFFT, Mrs. Margaret R.**
172 E. 91st Street
New York 28, N. Y. A 1940
- KRAL, V. Adalbert (M.D.)**
4145 Blairidge Crescent
Montreal, Que., Can. A 1953
- KRASNER, Leonard (Ph.D.)**
VA Hospital
Palo Alto, Calif. A 1952
- KRECKZKOWSKI, Joseph**
729 Carson Street
Pittsburgh 3, Pa. A 1944
- KROUT, Maurice H. (Ph.D.)**
1938 Cleveland
Evanston, Ill. A 1950
- KRUGMAN, Dorothy C. (Ph.D.)**
425 Riverside Drive
New York 25, N. Y. A 1944
- KRUGMAN, Herbert E. (Ph.D.)**
425 Riverside Drive
New York 25, N. Y. A 1943
- KRUGMAN, Judith I. (Ph.D.)**
100 Remsen Street
Brooklyn 1, N. Y. A 1941
- *KRUGMAN, Morris (Ph.D.)**
Board of Education
110 Livingston Street
Brooklyn 1, N. Y. F 1940
- KUSHNER, Malcolm (Ph.D.)**
118 Montgomery Avenue
Bala Cynwyd, Pa. A 1956
- KUTASH, Samuel B. (Ph.D.)**
3 Park Road
Maplewood, N. J. A 1950
F 1951
- LAKIN, Harriet A.**
1959 S. Crescent Heights
Los Angeles 34, Calif. A 1950
- LAMPL, Henry M.**
94 Fairmont Avenue
Kingston, N. Y. A 1955
- LANDISBERG, Selma**
204 W. 88th Street
New York 24, N. Y. A 1950
- LASKOWITZ, David**
1299 Grand Concourse
New York 52, N. Y. A 1953
- LAWRENCE, Ernest S. (Ph.D.)**
240 S. La Cienega Blvd.
Beverly Hills, Calif. A 1955
- LAWRENCE, James F. (Ph.D.)**
Vet. Adm. Hospital
Brookton, Mass. A 1949
F 1954
- LAWRENSEN, Thomas J.**
13-D Yale Street
Nutley, N. J. A 1955
- LEBEAUX, Mrs. Thelma W.**
106 Newton Avenue N.
Worcester 9, Mass. A 1944
- LEBOWITZ, Mrs. Anne**
13746 Magnolia Boulevard
Van Nuys, Calif. St. Aff. 1956
- LEDER, Ruth**
301 E. 21st Street
New York 10, N. Y. A 1950
- LEDWITH, Nettie H. (Ph.D.)**
Pittsburgh Child Guid. Center
201 DeSoto Street
Pittsburgh 13, Pa. A 1948
F 1952
- LEE, Dorothy B.**
33-33 82nd Street
Jackson Heights 72, N. Y. A 1950
- LEHMANN, Heinz E. (M.D.)**
Verdun Protestant Hospital
Box 6034
Montreal, Que., Can. A 1943
F 1951
- JEHRER, Ruth (Ph.D.)**
Woodside Receiving Hospital
800 E. Indiana Ave.
Youngstown 8, Ohio A 1944
F 1954
- LEIDEN, Irving (Ph.D.)**
739 Montrose
Chicago 13, Ill. A 1950
- LEONARD, A. T.**
708 Madison Avenue, S.E.
Grand Rapids, Mich. A 1954

- LEOPOLD, Julius**
104-29 117th St. St. Aff. 1953
Richmond Hill 19, N.Y.
- LEVENSTEIN, Mrs. Phyllis**
67-33 Kissena Boulevard
Flushing, L. I., N. Y. A 1948
- LEVEY, Archie**
Ste. 45, Community
Apartments, Saskatoon,
Saskatchewan, Can. A 1956
- LEVI, Joseph (Ph.D.)**
50 W. 72nd Street A 1947
New York 23, N. Y. F 1954
- LEVINE, Abraham (Ph.D.)**
2354 Paulding Avenue
Bronx 69, N.Y. A 1952
- LEVINE, Mrs. Phyllis R.**
3781 Bendemeer Road
Cleveland Heights 18,
Ohio A 1953
- LEVINGER, Leah**
340 East 5th Street
New York 3, N.Y. A 1952
- LEVINSON, Boris M. (Ph.D.)**
39-25 47th Street A 1952
Sunnyside, L. I. C. 4, N.Y. F 1956
- LEVIT, Herbert I. (Ph.D.)**
Dixmont State Hospital
Greenfield, Pa. A 1954
- LEVY, Ruth Jacobs (Ph.D.)**
14430 Union Avenue
Cambrian Park A 1948
San Jose, Calif. F 1951
- LEVY, Sidney J. (Ph.D.)**
7417 S. Oglesby Avenue
Chicago 49, Ill. A 1956
- LEWIS, Robert T. (Ph.D.)**
1948 Lupine Avenue
Monterey Park, Calif. A 1953
- LIBRESCO, Emile**
R.D. 1, Box 14
Pound Ridge, N. Y. A 1952
- LIEBEN, Mrs. Beatrice**
285 Fountain Road
Englewood, N. J. A 1953
- LIT, Jack**
1606 Nedro Avenue
Philadelphia 41, Pa. A 1956
- LITTLE, Jack F. (Ph.D.)**
8073 Earl Street
Oakland 5, Calif. A 1949
- LOCKWOOD, Wallace V. (Ph.D.)**
2548 Fifth Avenue
San Diego 3, Calif. A 1949
- LOEHRKE, Leah M. (Ph.D.)**
Veterans Administration
12227 Clifton Blvd.
Lakewood, Ohio A 1954
- LOLIS, Kathleen**
275 Clinton Avenue
Brooklyn 5, N. Y. A 1949
- LONGLEY, James L.**
Industrial Psychology Division
The Detroit Edison Company
2000 Second Avenue
Detroit 26, Mich. A 1953
- LONSTEIN, Murray (Ph.D.)**
Veterans Administration Hosp.
Leech Farm Road
Pittsburgh 6, Pa. A 1953
- *LOPES, Jose Leme (M.D.)**
Rua Martins Ferreira 75
Rio de Janeiro, Brazil F 1940
- LOW, Howard**
Department of Psychology
Penn State University
State College, Pa. A 1954
- LUCAS, Winifred B. (Ph.D.)**
7139 Hollywood Blvd.
Los Angeles 46, Calif. A 1951
- LUNDIN, William (Ph.D.)**
Chicago State Hospital
6500 Irving Park Road
Chicago 34, Ill. A 1954
- MacBRIDE, John L.**
12340 Tuller
Detroit 4, Mich. A 1955
- MacDONALD, D. Stewart (Ph.D.)**
Knox Reeves Advertising, Inc.
600 First National
Soo Line Bldg.
Minneapolis 2, Minn. A 1950
- MACHOVER, Mrs. Karen**
200 Fenimore Street A 1947
Brooklyn 25, N. Y. F 1948
- MACHOVER, Solomon (Ph.D.)**
200 Fenimore Street A 1947
Brooklyn 25, N. Y. F 1948
- MAGNETTE, Jules (Ph.D.)**
Nevada State Hospital
Reno, Nevada A 1956
- MAHRER, Alvin R. (Ph.D.)**
1st Lt., MSC, USA
Box 336, OMS
Fitzsimons Army Hospital
Denver, Colo. A 1955
- MAITI, Prof. Haripada P.**
Director, Institute of
Child Development
Ahmedabad 9, India A 1952
- MALLINGER, Betty R. (Ph.D.)**
600 S. Negley Avenue
Pittsburgh 32, Pa. A 1952
- MALLOY, Mrs. Helga**
35 Church Hill
Montreal 6, Quebec
Canada A 1943
- MALM, Mrs. Mildred**
11423 E. Hallwood Drive
El Monte, Calif. A 1949
- MALONE, Anne**
Department of Psychiatry
Montreal General Hospital
Montreal, P. Quebec
Canada St. Aff. 1954
- *MANN, Mrs. Edna B.**
215 W. 98th Street
New York 25, N. Y. F 1940
- MANSON, Morse P. (Ph.D.)**
10655 Santa Monica Blvd.
Los Angeles 25, Calif. A 1950
- MANUGE, Mrs. Elizabeth**
4851 Cote St. Luc
Montreal, Canada A 1956
- MANUILOW, Tatiana**
16, Cote Street
Catherine Road
Montreal, Que., Can. A 1954
- MARGOLIS, Mrs. Muriel F.**
390 Terrace Avenue A 1949
Garden City, L. I., N. Y.
- MARKER, Mrs. Beatrice W.**
2131 Delancey Place
Philadelphia 3, Pa. A 1951
- MARKHAM, Mrs. Sylvia**
116 E. 68th Street
New York 21, N. Y. A 1954
- MARSH, Donald, Ed. D.**
595 E. Colorado Street
Pasadena, Calif. A 1956
- MARSH, James T. (Ph.D.)**
Department of Psychiatry
University of California
Medical School
Los Angeles 24, Calif. A 1955
- MARX, Alfred**
Department of Psychology
Central State Hospital
Norman, Okla. A 1956
- MATHER, Elise D.**
5260 W. Chicago
Detroit 4, Mich. A 1948
- MATHEWS, W. Mason (Ph.D.)**
Merrill-Palmer School
71 Ferry Avenue, E. A 1949
Detroit 2, Mich. F 1955
- MATHIAS, Rudolf (Ph.D.)**
321 S. Midvale Boulevard
Madison 5, Wisc. A 1950
- MATLI, Elsie D.**
2042 Hyde Street St. Aff. 1954
San Francisco, Calif.
- MAYMAN, Martin (Ph.D.)**
Menninger Foundation
Topeka, Kansas F 1956
- MAZURKIEWICZ, Joseph F.**
323 West Columbus
Street St. Aff.
Shenandoah, Pa. 1955
- *McBRIDE, Katharine E. (Ph.D.)**
Bryn Mawr College
Bryn Mawr, Pa. A 1940
- McCARY, James Leslie (Ph.D.)**
5101 Alameda at
Southmore A 1948
Houston, Texas F 1956
- McCLOSKEY, Mrs. E.**
Venita Amsler
5515 Wissahickon Avenue
Philadelphia 44, Pa. A 1948
- McDONALD, Franklin R.**
3700 Cherrywood Ave. (Ph.D.)
Los Angeles 18, Calif. A 1952
- McFARLAND, Robert L. (Ph.D.)**
VA Research Hospital
333 E. Huron Street
Chicago 11, Ill. F 1956
- McNEILL, Harry V. (Ph.D.)**
125 E. 26th Street A 1950
New York 10, N. Y. F 1951
- McPHERSON, Marion W.**
The Neuro-Psychiatric (Ph.D.)
Clinic of St. Louis
457 N. Kingsway A 1953
St. Louis 8, Mo.
- MEHR, Helen Margulies (Ph.D.)**
498 McArthur Avenue A 1941
San Jose, Calif. F 1949
- MERCER, Margaret (Ph.D.)**
St. Elizabeths Hospital A 1946
Washington, D.C. F 1950
- MEYER, George (Ph.D.)**
2479 16th Avenue A 1950
San Francisco, Calif.
- *MEYER, Mortimer M. (Ph.D.)**
503 N. Bronson Avenue A 1940
Los Angeles 4, Calif. F 1949
- *MIALE, Mrs. Florence**
225 West 86th Street
New York, N. Y. F 1940
- MICHAEL, Carmen Miller**
Dept. of Psychiatry, (Ph.D.)
Southwestern Medical
School
2211 Oak Lawn A 1951
Dallas, Texas F 1955
- MICHAEL-SMITH, Harold**
1230 Park Avenue (Ph.D.)
New York 28, N. Y. F 1955
- MILLER, Cecil R.**
1762 Malcolm Avenue
Los Angeles 24 St. Aff. 1953
California A 1955
- MILLER, Christine (Ph.D.)**
973 Keeler Avenue
Berkeley 8, Calif. A 1955
- MILSTEIN, Dr. A. Freda**
17558 Prest A 1946
Detroit 35, Mich.
- MIMS, Mrs. Jean Giesey**
1110 E. 32nd Street A 1943
Austin, Texas
- MINDESS, Harvey (Ph.D.)**
8526 Horner Etree
Los Angeles 35, Calif. A 1953

- MINDLIN, Mrs. Dorothee F.
1820 Clydesdale Place, N.W.
Washington 9, D.C. A 1955
- MOLISH, CDR Herman B.
MSC, USNR
Naval Medical Center Staff
Bethesda, Md. A 1950
- MONTALTO, Fannie D. (Ph.D.)
2654 Fourth Avenue
San Diego 3, Calif. A 1952
- MOORE, Mrs. Harriet Bruce
145 E. Ohio Street
Chicago 11, Ill. A 1953
- MORELAND, Mrs. Margaret E.
Kirkwood Drive
Grand Island, N. Y. A 1950
- MORF, Gustav (M.D.) (Ph.D.)
1410 Fayolle Avenue
Montreal 19, Quebec
Canada A 1954
- MORGAN, Clellen L. (Ph.D.)
R.D. No. 29, Beatty Road
Media, Pa. A 1950
- MORGAN, David W. (M.D.)
127 N. Madison Avenue
Pasadena 1, Calif. A 1943
- MORGAN, Olive J. (Ph.D.)
R.D. No. 29, Beatty Road
Media, Pa. A 1950
- MORIZE, Mrs. Andre
4, Rue Jean-du-Bellay
Paris 4^e, France A 1945
- MORRIS, Charles M.
Eastern Pennsylvania
Psychiatric Institute
Henry Ave. &
Abbottsford Road
Philadelphia 29, Pa. A 1956
- MORRISON, Alfonso
Department of Spec. Educ.
Northwestern State College
Natchitoches, La. St. Aff. 1956
- MORROW, J. Lloyd (M.D.)
197 Passaic Avenue
Passaic, N. J. A 1943
- MOIZ, Dr. Gerald
1815 W. 6th Street
Topeka, Kansas A 1954
- MUELLER, Adolph R. (M.D.)
516 S. Fifth Street
Leavenworth, Kans. A 1943
- MUENCH, George (Ph.D.)
San Jose State College
San Jose, Calif. A 1946
- MULLEN, Miss Esther
10 Downing Street
New York 14, N. Y. A 1950
- *MUNROE, Ruth L. (Ph.D.)
239 Central Park West
New York 24, N. Y. F 1940
- MUNZ, Adam
67-30 Clyde Street
Forest Hills, L. I., N. Y. A 1955
- MURPHY, Rev. Kenneth
26 S. Center Street
Springfield, Ohio Aff. 1954
- MURPHY, Lois Barclay (Ph.D.)
Menninger Foundation
Topeka, Kans. A 1941
- MURRAY, Henry (M.D.)
48 Mt. Auburn Street
Cambridge 38, Mass. F 1950
- NAGELBERG, Leo (Ph.D.)
3900 Greystone Avenue
New York 68, N. Y. A 1952
- NAPOLI, Peter J. (Ed.D.)
Crompond Road
R.F.D. 2 A 1949
Yorktown Heights, N. Y.
- NEU, Mrs. Ruth A. Warburg
311 E. 72nd Street
New York 21, N. Y. A 1953
- NEUMAN, Gerard G. (Ph.D.)
3374 Pioneer Street
Salt Lake City 6, Utah A 1955
- NEWMAN, Joseph (Ph.D.)
University Drive
Pittsburgh 40, Pa. A 1950
- NICHOLAS, Alma L.
200 Retreat Avenue
Hartford 2, Conn. A 1954
- NIKEI, Frank
980 Cherry Street
Phoenixville, Pa. A 1948
- NORTHCOTT, Hollie
697 Dolores Street
San Francisco 10, Calif. A 1954
- NOSAL, Walter S. (Ed.D.)
John Carroll University
Cleveland 18, Ohio A 1954
- NUNEZ, Rafael (Ph.D.)
Progreso 63, Tacubaya
Mexico, 18 D.F., A 1954
- OCHROCH, Ruth
656 W. 162nd Street
New York 32, N. Y. A 1950
- ODERBERG, Lt. Phillip
QTRS #2512-E
Ft. Lewis, Wash. A 1954
- ODOM, Charles L. (Ph.D.)
602 Carondelet Building
New Orleans 12, La. A 1949
- OETTINGER, Mrs. Malcolm
160 Mt. Vernon Street
Boston, Mass. A 1945
- OLIN, Tom Davis
62 Hendricksen Avenue
Hartford 14, Conn. A 1956
- OLINGER, Leonard Bennett
9952 Santa Monica Blvd. (Ph.D.)
Beverly Hills, Calif. A 1954
- ORGEL, Sidney A. (Ph.D.)
425 W. Lafayette Ave.
Syracuse 5, N.Y. A 1952
- ORR, David Hamilton (Ph.D.)
Psychological Services
Allentown State Hospital
Allentown, Pa. F 1956
- OSSORIO, Abel Garcia (Ph.D.)
Department of Psychology
Washington University
St. Louis, Mo. A 1951
- PALM, Rose (Ph.D.)
263 West End Avenue
New York 23, N. Y. F 1955
- PAPANIA, Ned
20161 McIntyre
Detroit 19, Mich. A 1954
- PARNICKY, Dr. Joseph J.
School of Social Work
Rutgers University
New Brunswick, N. J. A 1949
- PARSONS, Rosa F.
3319 Columbia Street
San Diego 1, Calif. A 1947
- PAUL, Waters G.
Psychology Department
Station 5
Tuscaloosa, Ala. A 1956
- *PAULSEN, Alma A. (Ph.D.)
433 W. 21st Street
New York 11, N. Y. F 1940
- PAYNE, David H., M.A.D.O.
8345 Talbert Avenue
Huntington Beach, Calif. A 1950
- PEAK, Horace M.
Psychology Department
Patton State Hospital
Patton, Calif. A 1949
- PEIXOTTO, Helen E. (Ph.D.)
Child Center
Catholic University of America
Washington, D.C. F 1955
- PEMBERTON, W. H. (Ed.D.)
481 Summit Avenue
Mill Valley, Calif. A 1941
- PENA, Cesareo D. (Ph.D.)
South Street
Williamsburg, Mass. A 1951
- PENNINGROTH, Paul W.
1520 River Bluff Rd. (Ph.D.)
Jacksonville 11, Fla. A 1943
- PETERS, Marie Wilson
6144 Wayne Avenue
Philadelphia 44, Pa. A 1947
F 1951
- PEYMAN, Douglas A. R.
Psychology Department (Ph.D.)
Alabama State Hospital
Tuscaloosa, Ala. F 1956
- PHILLIPS, Mrs. Allverta B.
3561 N. Pennsylvania Street
Indianapolis 5, Ind. A 1950
- *PIOTROWSKI, Zygmunt A.
Box 1000 (Ph.D.)
Princeton, N. J. F 1940
- PLATT, Henry (Ph.D.)
5 Eisenhower Drive
Malvern, Willistown, Pa. A 1950
- PLITTMAN, Jack C.
Psychology Department
Patton State Hospital
San Bernardino, Calif. A 1951
- PORTER, Mrs. Lucille S.
250 First Avenue
New York 9, N. Y. St. Aff. 1953
- POSER, Ernest George (Ph.D.)
Department of Psychology
McGill University
3600 McTavish Street
Montreal, P.Q., Canada F 1953
- PRADOS, Miguel (M.D.)
McGill University
3801 University Street
Montreal, Que., Can. A 1942
- PRICE, Mrs. Marian Blewitt
854 S. Euclid
Pasadena 5, Calif. A 1953
- PROCTOR, Paul W. (Ph.D.)
315 W. 106th Street
New York 25, N. Y. A 1951
- PUZZO, Frank S.
150-52 232nd Street
Laurelton, N. Y. A 1949
- QUAYLE, Margaret S. (Ph.D.)
27 Parkview
Tuscaloosa, Ala. A 1950
F 1952
- RABIN, Albert I. (Ph.D.)
Department of Psychology
Michigan State University
East Lansing, Mich. F 1955
- RABINOVITCH, M. Sam
Department of Psychology
Montreal Children's Hospital
Montreal 25, Canada A 1955
- RADER, Dr. Gordon E.
Psychology Section
Department of Psychiatry
North Carolina
Memorial Hospital
Chapel Hill, N.C. A 1956
- RADTKE, William L.
University Guidance Center
University of Miami
Coral Gables 46, Fla. A 1954
- RAINWATER, Lee (Ph.D.)
145 East Ohio Street
Chicago 11, Ill. A 1956
- *RAPAPORT, David (Ph.D.)
Austen Riggs Center
Stockbridge, Mass. F 1940
- RAPKIN, Maurice (Ph.D.)
800 S. Robertson Blvd.
Los Angeles 35, Calif. A 1952

- RAPPAPORT, Sheldon R.** (Ph.D.)
290 Linden Lane A 1951
Merion, Pa. F 1956
- RAPPAPORT, Sidney M.** (Ph.D.)
1423 Mellon Road A 1949
Wyncote, Pa. F 1955
- RAUB, Edwin S.** (Ed.D.)
213 Midland Avenue
Wayne, Pa. A 1952
- RECORD, Father Maurice A.**
Aquinas Institute
402 Augustine Street
Rochester 13, N.Y. A 1954
- REICHARD, Suzanne** (Ph.D.)
1075 Cragmont Avenue
Berkeley, Calif. A 1941
- REICHENBERG-HACKETT, Wally** (Ph.D.)
c/o Department of Psychology
College Station
Duke University
Durham, N. C. A 1948
- REINTHAL, Mrs. Mary E.**
5341 Medina Line Road
West Richfield, Ohio A 1951
- REIS, Walter J.** (Ph.D.) (M.D.)
Western Psychiatric
Institute
3811 O'Hara Street
Pittsburgh 13, Pa. A 1943
- REISK, Jerome**
8604 Rugby Drive
Los Angeles 46, Calif. A 1955
- REISS, William J.** (Ph.D.)
VA Center
Kecoughtan, Va. A 1955
- REITZ, Mrs. Edna Maisner**
5080 Fallbrook
Woodland Hills, Calif. A 1953
- REITZELL, Mrs. Jeanne M.**
500 S. Arroyo Boulevard
Pasadena 2, Calif. A 1949
- RIBEIRO, Dr. Rene**
Rua Henrique Dias 271
Recife
Pernambuco, Brazil A 1951
- RICHARDS, T. W.** (Ph.D.)
Dept. of Neuropsychiatry
Louisiana State University
School of Medicine A 1942
New Orleans 12, La. F 1954
- *RICKERS-OVSIANKINA, M.**
Univ. of Connecticut (Ph.D.)
Storrs, Conn. F 1940
- RISCH, Frank** (Ph.D.)
3097 Manning Avenue
Los Angeles 64, Calif. A 1949
- RITCHEY, Hardin** (M.D.)
3015 Seventh Avenue, S.
Birmingham, Ala. A 1953
- *RITEY, Hector J.** (M.D.)
815 Park Avenue
New York 21, N. Y. A 1940
- *RIVERS, Mrs. Hubert M.**
111 Mitchell Drive
Pittsburgh 28, Pa. A 1940
- ROBINSON, Elizabeth Foster**
Child Psychiatry Division
101 Bradley Memorial
University Hospitals
Madison, Wisc. A 1954
- ROCKBERGER, Harry** (Ph.D.)
49 S. Munn Avenue
East Orange, N. J. A 1954
- RODAN, Mrs. Henrietta Itta**
515 E. 85th Street
New York 28, N.Y. St. Aff. 1954
- ROGERS, Lawrence S.** (Ph.D.)
1046 Madison Street
Denver 6, Colo. F 1954
- RORSCHACH, Mme. Olga**
Hirschgartenweg H. M. 1954
Zurich 57, Switzerland
- ROSE, Nicholas**
2038 Thayer Avenue
Los Angeles, Calif. A 1956
- ROSEN, Anna**
5856 Larchwood Avenue
Philadelphia 43, Pa. A 1955
- ROSEN, Esther Katz** (Ph.D.)
1810 Rittenhouse Sq.
Philadelphia 3, Pa. A 1945
F 1951
- ROSENBERG, Israel H.**
89-38 Whitney Avenue A 1953
Elmhurst 73, L. I., N. Y.
- ROSENTHAL, Robert** (Ph.D.)
713 N. Kingsley Drive St. Aff. 1955
Los Angeles 29, Calif.
- ROSENTHAL, Vin** (Ph.D.)
Dept. of Neurology
and Psychiatry
Northwestern University
Medical School
301 E. Chicago Avenue
Chicago 11, Ill. A 1956
- ROSNER, Stanley** (Ph.D.)
985 Fairfield Ave.
Bridgeport, Conn. A 1954
- ROSS, Harvey** (Ph.D.)
450 N. Bedford Drive
Beverly Hills, Calif. A 1956
- ROSS, M. Eleanor** (Ph.D.)
Tri-County Mental
Health Clinics A 1944
Norristown, Pa. F 1949
- *ROSS, W. Donald** (M.D.)
Department of Psychiatry
Cincinnati General Hospital
Cincinnati 29, Ohio F 1940
- ROTMAN, Saul R.** (Ph.D.)
Veterans Adm. Hospital
Sunmount, N. Y. A 1947
- RUHL, Mrs. R. Ernest**
817 Chestnut Street
Millinburg, Pa. A 1947
- RUJA, David H.** (Ph.D.)
954 N. Vermont Avenue
Los Angeles 29, Calif. A 1949
- RUSSELL, Howard**
9426 S. Van Ness Avenue
Los Angeles 47, Calif. A 1954
- *RYMER, Charles A.** (M.D.)
230 Majestic Bldg.
Denver 2, Colo. F 1940
- ST. CLAIR, Walter F.** (Ed.D.)
999 Mammoth Road
Manchester, N. H. A 1943
- SALTZMAN, Marguerite R.**
2533 S. 21st Street
Philadelphia 45, Pa. A 1950
- SALTZMAN, Sara**
7012 Wilson Lane
Bethesda 14, Md. A 1950
- SALZMAN, Mrs. Anne**
12548 Everglade Street
Los Angeles 66, Calif. A 1953
- SANDER, Emilie T.**
657 W. 161st Street
New York, N. Y. A 1950
- SANDERSON, Herbert** (Ph.D.)
Jewish Family Service
10 N.E. 3rd Avenue
Miami 32, Fla. A 1952
- SANDOW, Sophie Muriel**
2051 St. Raymond Avenue
Bronx 62, N.Y. St. Aff. 1956
- SARASON, Mrs. Esther K.**
Institute of Human Relations
Yale University
333 Cedar Street
New Haven, Conn. A 1944
- SARASON, Seymour B.** (Ph.D.)
Institute of Human Relations
Yale University
333 Cedar Street
New Haven, Conn. A 1944
- SARGENT, Helen D.** (Ph.D.)
2025 Westwood Drive A 1945
Topeka, Kans. F 1950
- SCALES, Margaret B.** (Ph.D.)
56 Seafield Lane
Bay Shore, L.I., N.Y. A 1955
- SCHACHT, Mrs. Leatrice Styrt**
5 Avis Drive
New Rochelle, N. Y. A 1950
- SCHACHTEL, Ernest G.**
299 Riverside Drive
New York 25, N. Y. F 1951
- SCHACHTEL, Mrs. Zeborah**
299 Riverside Drive
New York 25, N. Y. A 1953
- SCHAFER, Roy** (Ph.D.)
School of Medicine
Yale University
333 Cedar Street A 1953
New Haven, Conn. F 1955
- SCHAEFFER, Robert E.** (Ph.D.)
Byron Harless and
Associates, Inc.
420 W. Lafayette Street
Tampa, Fla. A 1956
- SCHANBERGER, William J.**
305 Veri Avenue
Pittsburgh 20, Pa. A 1954
- SCHATTMAN, Mrs. Esther**
Preger
210 E. 68th Street
New York 21, N. Y. A 1950
- SCHAW, Louis C.**
Child Guidance Clinic
Children's Memorial
Hospital
707 Fullerton Avenue
Chicago 14, Ill. St. Aff. 1956
- SCHER, Sam C.** (Ph.D.)
1668 Portland Avenue
St. Paul 4, Minn. A 1956
- SCHERER, I. W.** (Ph.D.)
Veterans Administration
Northampton, Mass. A 1949
- SCHILLINGER, Beverly**
457 West 57th Street
New York, N.Y. A 1956
- SCHILLINGER, Morton**
670 West End Avenue
New York 25, N. Y. A 1953
- *SCHLESINGER, Mrs. Alicia de**
Solis 155, VIII/A A 1940
Buenos Aires, Argentina
- SCHMIDL, Fritz** (M.S., Dr. Jur.)
6036 Upland Terrace A 1942
Seattle 18, Wash. F 1945
- SCHNEIDER, Stanley F.** (Ph.D.)
Neuropsychiatric Institute
University Hospital
Ann Arbor, Mich. A 1954
- SCHONBAR, Rosalea Ann**
3382 171st Street (Ph.D.)
Flushing 58, N. Y. A 1943
- SCHUBERT, Herman J. P.**
Route No. 2 (Ph.D.)
Williamsville 21, N. Y. A 1950
- SCHULMAN, Doris**
10 Downing Street
New York 14, N. Y. A 1948
- SCHULMAN, Irving** (Ph.D.)
100 Charles Drive
Bryn Mawr, Pa. A 1952
- SCHUMACHER, Audrey Sims**
50 Biscayne Dr. N.W. (Ph.D.)
Atlanta 9, Ga. A 1941 F 1949

- SCHUMACHER, Henry C.
50 Biscayne Dr. N.W. (M.D.)
Atlanta 9, Ga. A 1941
- SCHUPPER, Fabian X.
c/o Goldman
22 E. 60th Street
New York, N. Y. A 1954
- SCHWARTZ, Arthur A.
251 Central Park West
New York 24, N. Y. A 1951
- SCHWARTZ, Emanuel K.
12 E. 87th St. (Ph.D., D.S. Sc.)
New York 28 A 1949
F 1952
- SCHWERIN, Mrs. Erna
2000 Shawnee Boulevard
Lima, Ohio A 1950
- SEIDENFELD, Morton A. (Ph.D.)
National Foundation for
Infantile Paralysis
120 Broadway
New York 5, N. Y. A 1944
F 1954
- SEILER, Mrs. Geraldine F.
The Embassy
2100 Walnut Street
Philadelphia 3, Pa. A 1946
F 1950
- SEITZMAN, Daniel
2387 Ocean Avenue
Brooklyn 29, N. Y. A 1949
- SELIG, Kalman
188 Clinton Avenue
Newark 5, N. J. A 1950
- SELZER, Samuel
4518 Dewberry
Houston, Texas A 1956
- SELTZER, Samuel M.
17 Cadet Circle
Lancaster, N.Y. A 1954
- SHACKETTE, Mrs. Sarah Eyre
Box 166
Carmel Valley, Calif. A 1942
- SHANE, S. Gerald
4571 Sherbrooke St.
Westmount, P.O., Canada A 1949
- SHAPERO, Mrs. Amy Miller
34 Hubbard Avenue
Stamford, Conn. A 1949
- SHAPIRO, David (Ph.D.)
Austen Riggs Foundation
Stockbridge, Mass. A 1950
- SHARPE, Susie McMillan (Ph.D.)
46 W. 4th Street
Mt. Vernon, N. Y. A 1948
- SHEEHAN, Joseph (Ph.D.)
Department of Psychology
University of California
Los Angeles 24, Calif. A 1952
- SHEER, Dr. Daniel E.
Department of Psychology
University of Houston
Houston 4, Texas A 1956
- SHERMAN, Murray H. (Ph.D.)
350 Central Park West
New York 25, N. Y. A 1956
- SHIPMAN, William G. (Ph.D.)
3601 Fifth Avenue
Pittsburgh 19, Pa. A 1956
- SHNEIDMAN, Edwin S. (Ph.D.)
114-15 Rose Avenue
Los Angeles 34, Calif. F 1951
- SHOBEN, Edward J., Jr. (Ph.D.)
Teachers College
Columbia University
New York 27, N. Y. A 1952
- SHOR, Joel (Ph.D.)
121 East 94th Street
New York 28, N. Y. A 1945
- SIEGEL, Edward L. (Ph.D.)
606 E. Raynor Avenue
Syracuse, N. Y. A 1950
- SIEGEL, Joseph H. (Ph.D.)
3304 Newcastle Drive
Dallas 20, Texas A 1956
- SIEGEL, Max (Ph.D.)
50 Kenilworth Place
Brooklyn 10, N.Y. F 1956
- SIEGEL, Miriam G. (Ph.D.)
57 E. 90th Street
New York 28, N. Y. A 1942
F 1949
- SIMKIN, James S. (Ph.D.)
489 Summit Avenue
Maplewood, N. J. A 1952
- SINGER, Roland H.
320 E. Center Street
Danville, Pa. A 1953
- SKEELS, Dell
Humanistic-Social Department
University of Washington
Seattle 15, Wash. Aff. 1954
- SLESS, Bernard
225 Upland Road
Merion, Pa. A 1952
- SMALZRIED, Newell T.
5475 Woodward
Detroit 2, Mich. (Ph.D.) A 1956
- SMITH, Frances (Ph.D.)
7135 E. Wardlow Road
Long Beach 8, Calif. A 1955
- SMITH, Mrs. Margaret J.
Wisconsin Diagnostic Center
1552 University Avenue
Madison, Wis. A 1950
- SMOLINSKY, Harold J. (Ph.D.)
Wernersville State Hospital
Wernersville, Pa. A 1952
- SNOWDEN, Robert F.
1380 Circle Drive
San Marino 9, Calif. A 1953
- SOBOL, Albert L. (Ph.D.)
308 Betsy Brown Road
Port Chester, N.Y. F 1954
- SOMERVILLE, Addison W.
57 East 46th Street
Chicago 37, Ill. A 1956
- SOMMERS, Vita Stein (Ph.D.)
981 S. Westmoreland
Los Angeles 6, Calif. A 1946
- SOSNOFF, Mrs. Miriam
1895 Grand Concourse
New York 53, N. Y. A 1955
- SPANAY, Emma (Ph.D.)
Queens College
Flushing 67, N. Y. A 1949
- SPENCER, Mrs. Betty L.
1912 18th Street
Huntington, W. Va. A 1951
- SPIEGELMAN, Marvin (Ph.D.)
c/o C. G. Jung Inst.
Gemindestrasse 27
Zurich 32, Switzerland A 1953
- SPIN, Mrs. Lillian
500 E. 56th Street
Brooklyn 9, N. Y. A 1950
- SPINDLER, Mrs. Joan Elizabeth
1833 McLynn Avenue
Montreal 29, Quebec, Canada A 1948
- SPIRES, Alan M.
250 Crown Street
Brooklyn 25, N.Y. A 1954
- SPITZER, Paul S.
P.O. Box 100
Perkins, Calif. A 1951
- STANFORD, Dr. Margaret J.
Sonoma State Hospital
Eldridge, Calif. A 1950
- STANTON, Mrs. Harriet
15 Livermore Road
Wellesley Hills 82, Mass. A 1942
- STAVRIANOS, Mrs. Bertha
823 Ingleside Place
Evanston, Ill. A 1943
- STEEN, Thomas W. (Ph.D.)
599 North Main Street
Pomona, Calif. A 1954
- STEINER, Matilda E.
220 Brookdale Avenue
Newark 6, N. J. A 1943
F 1946
- STEINER, Meta (Ph.D.)
40-70 Hampton Street
Elmhurst 73, N. Y. A 1948
F 1950
- STEINZOR, Bernard (Ph.D.)
49 W. 96th Street
New York 25, N. Y. A 1943
- STEISEL, Ira M. (Ph.D.)
Psychiatric Clinic for Children
University of Washington
Seattle 5, Wash. A 1951
- STENDEL, Mrs. Kathleen
Glendon-Westwood Prof. Bldg.
1250 Glendon Avenue
Los Angeles 24, Calif. A 1950
- STEPHENS, Gordon M. (M.D.)
189 Kingsley Avenue
Winnipeg, Man., Can. A 1941
- STERN, Mrs. Phyllis Glaser
109 North Avenue
Fanwood, N. J. A 1952
- STERNBERG, David
3130 Brighton 7th Street
Brooklyn 35, N. Y. St. Aff. 1955
- STERNE, Spencer B.
Department of Psychology
Wayne County General Hosp.
Eloise, Mich. A 1955
- STEWART, Barbara M. (Ph.D.)
267 S. New Hampshire
Los Angeles 4, Calif. A 1949
- STONE, Harold (Ph.D.)
1501 S. Doheny Drive
Los Angeles 35, Calif. A 1956
- STONE, Irving R.
State Mental Hygiene Clinic
3525 Fourth Avenue
San Diego 3, Calif. A 1951
- *STONE, L. Joseph (Ph.D.)
Vassar College
Poughkeepsie, N. Y. F 1951
- STONESIEFER, Fred A. (Ph.D.)
208 N. Broad Street
Selinsgrove, Pa. A 1951
- STOOPS, Mrs. Wanda Rah
3258 N. New Jersey Street
Indianapolis 35, Ind. A 1949
- STOPOL, Murray S. (Ph.D.)
Hamm Memorial Psych. Clinic
611 Hamm Building
St. Paul 2, Minn. A 1953
- STOTZ, Marion
660 N.E. 34th Street
Miami, Fla. A 1953
- STRAIT, Bennett
38 N. Seventh Street
Stroudsburg, Pa. A 1950
- STRAUSS, Mrs. Elsa L.
3819 Dakota Street
Cincinnati, Ohio A 1951
- STRUTHERS, Alice Ball (Ph.D.)
2501 Palos Verdes Drive, N.
Palos Verdes Estates
California A 1949
- SULZER, Edward S.
49-09 39th Avenue
Long Island City 4, N.Y. St. Aff. 1954
- SWIFT, Joan Woodcock (Ph.D.)
5628 S. Blackstone Avenue
Chicago 37, Ill. A 1945
- SYMONDS, Percival M. (Ph.D.)
Teachers College
Columbia University
New York 27, N. Y. F 1951

- TABIN, Johanna Krout (Ph.D.)**
162 Park Avenue
Glencoe, Ill. A 1952
- TALLET, Norman (Ph.D.)**
47 Mohawk Road
Hampton, Va. A 1953
- *TALLMAN, Gladys**
Kent, Conn. F 1940
- TAUBEE, Earl S. (Ph.D.)**
VA Mental Hygiene Clinic
Vet. Adm. Hospital A 1953
Omaha 5, Nebr. F 1955
- *TEICH, Mrs. Marianne**
2040 McGraw Avenue
Bronx 62, N. Y. A 1940
- TEMERLIN, Maurice K.**
Guidance Service (Ph.D.)
University of Oklahoma
Norman, Okla. A 1956
- TENNEY, Edward V. (Ph.D.)**
735 Holland Avenue
Fresno, Calif. A 1948
- TOLMACH, Mrs. Regina E.**
16 W. 77th Street
New York 24, N. Y. A 1949
- TOLMAN, Ruth S. (Ph.D.)**
345 S. Michigan Ave.
Pasadena 5, Calif. F 1950
- TOMBLIN, Donald**
42 Fairlee Road
West Hartford, Conn. A 1956
- TOPPING, Mrs. Robert C.**
122 East 22nd Street
New York 10, N. Y. A 1948
- TOWNSEND, Mrs. Marjorie M.**
Plainfield, Vt. A 1949
- TRACHTMAN, Gilbert M.**
1483 Shore Parkway
Brooklyn 14, N. Y. A 1954
- TREAT, Wolcott C.**
5027 Campanile Drive
San Diego 15, Calif. A 1953
- TRIPP, Clarence A.**
One Sheridan Square
New York 14, N. Y. A 1956
- TROUP, Evelyn (Ph.D.)**
12890 Sunset Blvd.
Los Angeles 49, Calif. F 1949
- *TUFT, Carlyn M. (Ph.D.)**
4613 Larchwood Avenue
Philad 19, Pa. A 1940
- UMPIERRE, Francisco Jose**
Mental Health Clinic
Hato Rey, St. Aff. 1956
Puerto Rico
- VACCARO, J. John (Ph.D.)**
105 34 63rd Avenue
Forest Hills 75, N. Y. F 1955
- VAN ALSTYNE, Dorothy**
Manatee-Sarasota (Ph.D.)
Guidance Center,
Bradenton-Sarasota
Airport, Sarasota, Fla. A 1949
- VANDENBERG, Steven G.**
(Drs. Jur., Ph.D.)
Hereditary Abilities
Study
1135 E. Catherine
Ann Arbor, Mich. A 1951
- VAN WEST, Mrs. Joan**
193-22 109th Avenue
Hollis, N. Y. St. Aff. 1954
- VAYHINGER, Dr. John M.**
Mental Health Clinic
527 W. Colfax
South Bend 1, Ind. A 1952
- VINSON, David (Ph.D.)**
1210 Medical Towers
Houston 25, Texas A 1949
- VORHAUS, David**
27 W. 86th Street
New York 24, N. Y. H. M. 1954
- VORHAUS, Pauline G. (Ed.D.)**
27 W. 86th Street
New York 24, N. Y. F 1944
- WAGNER, Mazie Earle (Ph.D.)**
Route 2
Williamsville 21, N. Y. A 1950
- WALKER, Robert G. (Ph.D.)**
Old Main Street
Marshfield Hills, Mass. A 1952
- WALTON, Mrs. Norma R.**
930 Dart Road, Rt. 3
Mason, Michigan A 1949
- WARNER, Samuel J. (Ph.D.)**
200 East 16th Street
New York 3, N. Y. A 1953
- WARREN, Lurene Z.**
433 State
Petoskey, Mich. A 1949
- WARSHAWSKY, Mrs. Florence**
2889 Torrington Road
Shaker Heights 22, Ohio A 1949
- WATERS, Thomas J.**
839 Huntington Pike
Southampton (Bucks), Pa. 1955
- WATKINS, Roberta Frank**
533 San Marino
San Marino, Calif. St. Aff. 1955
- WEINRUBE, Mrs. Claire**
236 W. 70th Street
New York, N. Y. St. Aff. 1953
- WEIR, John R. (Ph.D.)**
2841 Highview Avenue
Altadena, Calif. A 1954
- WEISS, Bertram A.**
4322 Alconbury Lane
Houston, Texas A 1956
- WEISS, Emalyn R.**
733 N. 3rd Street
Reading, Pa. A 1950
- WEISS, Herman R. (Ph.D.)**
1277 E. 48th Street
Brooklyn 34, N. Y. A 1953
- WEISS, Sheldon W. (Ph.D.)**
520 Carbondale Road
Wauwatosa, Pa. A 1951
- WEISSKOFF-JOELSON, Edith**
Dept. of Psychology (Ph.D.)
Purdue University A 1943
Lafayette, Ind. F 1951
- WEISSMANN, Serena**
Letchworth Village
Thiells, N. Y. A 1950
- WELLS, Frederick Lyman (Ph.D.)**
87 School Street
Belmont 78, Mass. H.M. 1950
- WENGATE, Pauline (Ph.D.)**
7057 East Brainerd Rd.
Chattanooga, Tenn. A 1950
- WENTLING, Verda M.**
15 Elk Street
Hempstead, L. I., N. Y. A 1950
- WENTWORTH-ROHR, Ivan**
270 West End Avenue (Ph.D.)
New York, N. Y. A 1950
- WERNER, Kathryn**
521 W. 11th Street
New York 14, N. Y. A 1952
- WERTHEIMER, Rita (Ph.D.)**
Western Psychiatric Institute
University of Pittsburgh
3811 O'Hara Street
Pittsburgh 13, Pa. A 1955
- WEXLER, Rochelle M.**
1938 E. 12th Street
Brooklyn 29, N. Y. A 1949
- WHITE, Mrs. Helen Cecelia**
1025 Worsham Drive
Whittier, Calif. A 1950
- WHITMAN, Mrs. Dorothy**
7516 N. Eastlake Terrace
Chicago 26, Ill. St. Aff. 1956
- WHITMAN, Roy M. (M.D.)**
533 E. Huron Street
Chicago 11, Ill. A 1934
- WHITSELL, Leon J. (M.D.)**
52 Shore View Avenue
San Francisco 21, Calif. A 1942
- WICKERSHAM, Francis Myron**
U.S.P.H.S.H. (Ph.D.)
Fort Worth Texas A 1952
- WIGDOR, Blossom T. (Ph.D.)**
4552 Lacombe Avenue
Montreal 26, Quebec, A 1949
Canada F 1956
- WILL, Dr. Guido**
Apartado Aéreo 0651
Bogota, Colombia, S.A. A 1955
- WILLIAMS, Lt. Col. Wendell R.**
Letterman Army
Hospital USA
San Francisco, Calif. A 1956
- WILKINS, Mrs. Verna M.**
Mother Goose Nursery School
9500 Warren Street
Silver Springs, Md. A 1950
- WILLIAMS, Gertha (Ph.D.)**
17211 Buckingham Dr.
Birmingham, Mich. F 1949
- WILLIAMS, Helen E. (Ed.D.)**
210 W. 70th Street
New York 23, N. Y. A 1950
- WILLIAMS, Mrs. Jessie M.**
Griffins
Abinger Hammer
Nr. Dorking, England A 1950
- WILLIAMSON, Margaret O.**
4 Bayview Place
Staten Island 4, N. Y. A 1945
- WILSON, Mary T.**
P.O. Box 577
Amsterdam, N. Y. A 1944
- WINER, Harold R. (Ph.D.)**
8215 Westchester Drive
Dallas 25, Texas A 1956
- WITZEMAN, S. Evangeline**
5021 Hawkins Road (Ph.D.)
West Richfield, Ohio A 1952
- WOLF, Clara C. (Ph.D.)**
Inhurst House
Baughurst, Nr. Basingstoke
Hants, England A 1951
- WOLF, S. Jean (Ph.D.)**
220 Fifth Avenue
New York 1, N. Y. A 1944
- *WOLFSON, Mrs. Ruth**
124 W. 79th Street
New York 24, N. Y. F 1940
- WOLPE, Zelda S. (Ph.D.)**
152 S. Lasky Drive
Beverly Hills, Calif. A 1950
- WOLTMANN, Adolf G.**
1364 Lexington Ave.
New York 28, N. Y. A 1949
- WOOD, Austin B. (Ph.D.)**
810 E. 19th Street
Brooklyn 30, N. Y. A 1943
- WOOLF, Henrietta K.**
5345 Dent Place, N.W.
Washington 7, D.C. A 1950
- WRIGHT, M. Erik (M.D.)**
Department of Psychology
University of Kansas
Lawrence, Kans. A 1943
- WRIGHT, Morgan**
Medical Arts Clinic
Regina, Saskatchewan, Can. A 1955
- WYATT, Frederick (Ph.D.)**
1027 E. Huron Street
Ann Arbor, Mich. F 1949
- WYLLIE, Alexander**
Box 902
Norfolk State Hospital
Norfolk, Neb. St. Aff. 1956

YUDIN, Sidney
Department of Psychology
Bellevue Psych. Hospital
New York, N. Y. A 1952

ZACHMANN, Mrs. Esther
Apartado Aereo 40-84 St. Aff.
Bogota, Colombia, S.A. 1956

ZADEK, Mildred A.
151 Lincoln Road
Brooklyn 25, N. Y. A 1949

ZAVINSKY, Mrs. Almena Parker
APO 937, c/o Postmaster
Seattle, Wash. A 1951

ZEICHNER, Abraham M. (Ph.D.)
Fairfield State Hospital
Newtown, Conn. F 1955

ZIERER, Ernest (Ph.D.)
42-05 Layton Street
Elmhurst, L. I., N. Y. A 1952

ZIMMERMAN, Irla Lee (Ph.D.)
2007 Wilshire Blvd.
Los Angeles 57, Calif. A 1949

ZUCKER, Luise J. (Ph.D.)
276 Riverside Drive
New York 25, N. Y. F 1950

GEOGRAPHICAL DIRECTORY OF MEMBERSHIP OF THE SOCIETY FOR PROJECTIVE TECHNIQUES UNITED STATES AND TERRITORIES

ALABAMA

Ritchey, Hardin

Tuscaloosa

Paul, Waters C.
Peyman, Douglas A. R.
Quayle, Margaret S.

ARIZONA

Phoenix

Canter, Aaron H.
Iverson, Norman
Katz, Harriet

CALIFORNIA

Baker, Gertrude
Bauer, Johanna R. G.
Beale, Elizabeth A.
Bolgar, Hedda
Bradway, Katherine
Campion, John
Cole, Joseph
Crain, William
Crile, Mary
De Vault, Helen C.
Dunlap, Dorothy
Everett, Evelyn G.
Gering, Evelyn
Klopper, Bruno
Krasner, Leonard
Lebowitz, Anne
Lewis, Robert T.
Payne, David H.
Peak, Horace M.
Pemberton, W. H.
Plittman, Jack C.
Shackett, Sarah
Smith, Frances
Spitzer, Paul S.
Stanford, Margaret
Steen, Thomas
Struthers, Alice Ball
White, Helen Cecelia

Altadena

Brozovich, Stanley M.
Weir, John R.

Berkeley

Bell, John F.
Inman, John M.
Kelley, Douglas M.
Miller, Christine
Reichard, Suzanne

Beverly Hills

Brandt, Rudolph J.
Joel, Walther
Johnson, Theresa
Lawrence, Ernest
Olinger, Leonard
Ross, Harvey
Wolpe, Zelda S.

El Monte

Ericson, Helen
Malm, Mildred

Fresno

Davison, Arthur H.
Tenney, Edward V.

Los Angeles

Armon, Mary Virginia
Buhler, Charlotte
Crumpton, Evelyn
Dryselius, Harold
Eiduson, Bernice T.
Fisner, Betty G.
Enochs, Neil
Evans, Ray B.
Farberow, Norman L.
Feifel, Herman
Fichman, Lionel
Fils, David
Forer, Bertram R.
Forer, Lucille K.
Frostig, Marianne
Hays, Berta
Holt, James
Howard, Stephen J.
Knapp, Pearl G.
Lakin, Harriet A.
Lucas, Winifred
Manson, Morse P.
Marsh, James
McDonald, Franklin R.
Meyer, Mortimer M.
Miller, Cecil R.
Mindess, Harvey
Rapkin, Maurice
Reisel, Jerome
Risch, Frank
Rose, Nicholas
Rosenthal, Robert
Ruja, David H.
Russell, Howard
Salzman, Anne
Sheehan, Joseph
Shneidman, Edwin S.
Sommers, Vita Stein
Stendel, Kathleen
Stewart, Barbara M.
Stone, Harold
Troup, Evelyn
Zimmerman, Irla Lee

North Hollywood

Anderson, Dorothy V.
Grayson, Harry M.

Oakland

Due, Floyd O.
Elliott, Merle H.
Little, Jack F.

Pasadena

Diamond, Florence
Korda, Geraldine J.
Marsh, Donald
Morgan, David W.
Price, Marian
Reitzell, Jeanne M.
Tolman, Ruth

San Diego

Heisler, Verda
Lockwood, Wallace V.
Montalto, Fannie D.
Parsons, Rosa F.
Stone, Irving R.
Treat, Wolcott C.

San Francisco

Bergstrom-Borland, Ingrid
Frankel, Esther
Harris, Robert E.
Kalis, Betty Lee
Korner, Anneliese F.
Matli, Elsie
Meyer, George
Northcott, Hollie
Whitsell, Leon
Wilkin, Wendell R.

San Jose

Burton, Arthur
Levy, Ruth J.
Mehr, Helen Margulies
Muench, George

San Marino

Snowden, Robert F.
Watkins, Roberta F.

Santa Barbara

Clapp, Hazel S.
Dunn, Michael B.

Woodland Hills

Cartwright, Robert W.
Reitz, Edna M.

COLORADO

Estrada, Carol G.

Denver

Billings, Edward G.
Fehrenbach, Alice R.
Kahn, Marvin
Mahrer, Alvin
Rogers, Lawrence S.
Rymer, Charles A.

CONNECTICUT

Barbara, Peter Paul
Holmes, Frances B.
Holzberg, Jules D.
Rickers-Oviankina, Maria
Shaper, Amy Miller
Tallman, Gladys
Tomblen, Donald

Bridgeport

Fine, Harold J.
Hemmendinger, Larry
Rosner, Stanley

Hartford

Nicholas, Alma L.
Olin, Tom Davis

New Haven

Ames, Louise Bates
Hellersberg, Elizabeth
Klatskin, Ethelyn H.
Sarason, Esther K.
Sarason, Seymour B.
Schafer, Roy

Newtown

Glass, Blanche
Zeichner, Abraham

DELAWARE

Blessing, Harold D.
Grossman, Searles

FLORIDA

Brodie, Dorothy B.
Kelsey, Howard
Coral Gables
Chaykin, Albert
Radtke, William
Jacksonville
Ciccarello, Jennie
Flemming, Edward
Penningroth, Paul W.
Miami
Allen, Robert M.
Sanderson, Herbert
Stotz, Marion
Tampa
Blau, Theo.
Schaffer, Robert E.

GEORGIA

Atlanta
Hughes, Robert M.
Schumaker, Audrey S.
Schumaker, Henry C.

ILLINOIS

Alexander, Robert H.
Barrell, Robt. P.
Klass, Walter K.
Tabin, Johanna Krout
Chicago
Altman, Charlotte H.
Beck, Samuel J.
Bernstein, Hilde R.
Fromm, Erika O.
Handel, Gerald
Henry, William E.
Hilkevitch, Rhea R.
Leiden, Irving
Levy, Sidney J.
Lundin, William
McFarland, Robert L.
Moore, Harriet Bruce
Rainwater, Lee
Rosenthal, Vin
Schaw, Louis C.
Somerville, Addison W.
Swift, Joan Woodcock
Whitman, Dorothy
Whitman, Roy M.

INDIANA

Diana, Pearl Butler
Gibby, Robert G.
Vayhinger, John M.
Evansston
Krout, Maurice H.
Stavrianos, Bertha
Indianapolis
Graves, Winifred S.
Phillips, Alverta
Stoops, Wanda Rah
Lafayette
Baker, Lawrence M.
Weisskopf-Joelson, Edith

IOWA

Dingman, Paul R.

KANSAS

Mueller, Adolph R.
Wright, M. Erik
Topeka
Mayman, Martin
Mutz, Gerald
Murphy, Lois Barclay
Sargent, Helen

KENTUCKY

Lexington
Johnson, Elizabeth
Kidorff, Irwin

LOUISIANA

Morrison, Alfonso
New Orleans
Bourke, William
Crovetto, Lorraine
Font, Marion McKenzie
Fosberg, Irving A.
Odom, Charles L.
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Personal Problems and Diagnostic Errors of Clinical Psychologists¹

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Numerous studies have explored relationships between personality and the perception of others, but relatively few studies have focussed upon these relationships insofar as they affect the interpretation of projective tests by clinical psychologists. Certain otherwise-interesting studies are not directly applicable to this particular problem. In some instances, subjects were undergraduate psychology students or other groups not necessarily comparable to practicing clinicians in the ability to form unbiased judgments (1, 11, 13). Other studies have utilized diagnostic judgments made on the basis of personal observation rather than through examination of projective data (3, 8, 9).

Studies to which these limitations do not apply suggest that, as might be theoretically expected, the diagnostic judgments of clinical psychologists are not necessarily free from personal bias. It is found that different psychologists may have different diagnostic preferences, emphasizing various aspects of the patient's personality, even in the absence of disagreement about the basic diagnosis (4, 6, 7, 10). In two highly-suggestive studies it was found that the personal traits of the psychologist appeared to influence their diagnoses. Hammer and Piotrowski (5) found a rank-order correlation of .94 between personal

hostility of six psychologists, measured by interpretations of their Szondi profiles and by the judgments of their supervisors, and the degree of hostility which the psychologists attributed to the figure drawings of children. Filer (2), using a minimum of twelve actual case reports turned in by each of thirteen clinical psychologists, tabulated the frequency of references to several personality variables, including hostility and passive dependency; utilized psychoanalytic theory to predict complex and indirect relationships between the overt behavior of the psychologists and their diagnostic preferences; evaluated the psychologists' behavior by questionnaires filled out by their supervisors; and reports that his hypotheses were supported at the .05 level or better.

Studies such as Filer's, together with many theoretical considerations, suggest that we cannot confidently predict simple, direct relationships between the degree to which a psychologist possesses a given trait and the tendency to exaggerate the importance of this trait in a patient. Perceptual distortions related to a given trait may depend, not only upon the strength of the trait in the perceiving individual, but also upon such variables as self-understanding or insight; the amount of anxiety associated with the trait; the degree to which this anxiety is conscious or unconscious; and the habitual defense mechanisms which are utilized. Moreover, there is evidence for the existence of several different types of perceptual distortion. If assimilative projection contributes to diagnostic errors, a psychologist might erroneously perceive a patient as resembling himself in traits of which he is aware. If projection in the classical psychoanalytic

¹ This article is based on portions of a thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at New York University, under the direction of Dr. Irwin Katz, to whom the author expresses her appreciation. Grateful acknowledgment is also due to Drs. Robert R. Morrow, Robert R. Holt, and Elsa Robinson, and in particular to the clinical psychologists, many of them of senior rank, who cooperated so generously in this study.

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sense takes place, a psychologist might erroneously attribute to a patient a trait which he himself unconsciously possesses. Perceptual defense, on the other hand, might cause the psychologist to overlook problems similar to his own. And, finally, perceptual vigilance might over-sensitize a psychologist to problems, resembling his own, which would actually exist in the patient.

To explore these aspects of the problem, diagnostic variability among psychologists must be considered in relation to adequate, objective information about the patient, a procedure which is used in the present study. Three questions will be explored:

First, will psychologists who are worried about a specific problem tend to exaggerate the importance of this problem to a patient?

Second, will psychologists who lack self-understanding on a specific personality trait tend to show relatively poor understanding of the importance of this trait in the personality of a patient? It will be noted that this question makes no distinction between diagnostic errors which over-estimate the trait (possibly showing perceptual vigilance) and errors which under-estimate the trait (possibly showing perceptual defense).

Third, will psychologists who *under-estimate* the extent to which a given trait appears in their own behavior tend to *over-estimate* the importance of the trait in a patient? This question is designed to explore the psychoanalytic mechanism of projection as a separate defensive process leading to perceptual errors.

METHOD

Experimental materials

The nature of our problem requires the psychologists to make judgments about aspects of the patient's personality on which objective information can be obtained, and about which there is minimal possibility of theoretical or semantic con-

fusion. If, for example, a psychologist were asked to discuss the importance of Oedipal conflicts in a patient, his opinions would be difficult to verify, especially since there may be various viewpoints as to the precise meaning of such a term.

Therefore the psychologists were not asked to discuss unconscious conflicts or psychodynamics, but were asked to make specific judgments about the habitual behavior and conscious attitudes of a psychoanalytic out-patient, "Jean," whose Rorschach and TAT responses were submitted to them along with a special instrument called the "Jean Test." This test, developed along lines originated by Soskin (12), consists of 30 multiple-choice questions, each with four alternative answers.

The Jean Test provides an opportunity for diagnostic choices related to five personality variables: Money Worries; Hostility; Passive Dependency; Depressive Tendencies; and Aloofness and Withdrawal. For each test question, the best answer was selected in advance by a panel of three: Jean's psychoanalyst, who had seen the patient three times a week for six months; the diagnostician who had administered the projective tests and had observed Jean's behavior during the diagnostic interview; and a psychiatrist who examined notes taken by the analyst and judged the test items independently. No test items were included unless the three experts agreed as to which answer was best.

Items of the Jean Test were further classified by another panel of three psychologists who decided which answers were related to each of the five personality variables. Again, unanimous agreement was taken as the basis for retaining the test items.

Here are examples of questions from the Jean Test:

1. When Jean is upset about something, she's likely to
 - a. get drunk
 - b. become detached and apathetic

- c. seek the help and protection of other people
- d. vent her disturbance by becoming annoyed at the nearest person

According to the analyst and his co-panelists, Item *b*, related to the variable Aloofness and Withdrawal, is best; hence, failure to select this item would be considered as an error (of under-estimation) on this variable. Item *c* represents Passive Dependency and Item *d* Hostility; hence selection of either of these items would be scored as an error (of over-estimation) on these variables. Item *a*, a buffer item, is related to none of the five variables.

- 2. Jean's thoughts are often filled by
 - a. obsessive daydreams of revenge on various people
 - b. feelings of vague worry and depression
 - c. half-conscious fantasies in which she imagines how life would be if she could play a male role
 - d. obsessive worries about money

Here, Item *b*, related to the variable Depressive Tendencies, is best; hence, failure to select this item would be considered as an error (of under-estimation) on this variable. Item *a* represents Hostility, and Item *d*, Money Worries. Item *c* is again a buffer item.

Equal opportunities to make errors of under-estimation and over-estimation on the five variables were not provided by the Jean Test, because the actual personality of this patient did not permit this. According to Jean's analyst, aloofness and withdrawal were most typical of her feelings and behavior; she "withdrew from close personal contacts and attempted to detach herself from her own feelings insofar as possible. The aloofness may be considered as a defense against feelings of depression which were partly conscious at the time the projective tests were administered. Strong passive - dependent

needs were present, but were seldom manifested in behavior. Feelings of hostility were deeply repressed, rarely conscious, and almost never expressed. The patient showed little concern about economic problems; this lack of concern appeared genuine and is not regarded as a reaction-formation." As this description by the analyst makes clear, Jean's actual personality was such that, on the two variables of Hostility and Money Worries, the test could be constructed so as to allow only errors of over-estimation.

Data about the psychologists were obtained by two forms which they were asked to fill out after having completed and turned in the Jean Test. A questionnaire, requesting information about the professional background of the psychologists, also contained a direct question regarding worries about money at the present time, which could be answered on a three-point scale: 1) very worried; 2) moderately worried; 3) not especially worried. Answers were accepted at face value on the assumption that money worries are usually conscious and are rather readily admitted in the social milieu of clinical psychologists.

For the remaining four variables, scores on self-understanding were obtained through a second form filled out by the psychologists, all of whom worked in Veterans Administration installations. This form provided definitions of the four variables; listed names of colleagues in the installation where the psychologist worked; and asked each psychologist to rate the extent to which each trait appeared in the behavior of his colleagues, on a five-point rating scale. Each psychologist was then asked to predict the average rating which he would receive on each trait from his colleagues. The discrepancy between his prediction and the average rating which he actually received on each variable was taken as the Self-Understanding score; thus a high score would be considered to indicate rela-

tively poor self-understanding on a specific variable, and vice versa.

These scores were accepted as indicating comparable lack of self-understanding regardless of whether the psychologist under-estimated or over-estimated the average rating which he would receive. It was thought that, to take the trait of Hostility as an example, a problem in this area might be indicated by a subject's belief that his behavior was *less* hostile than it appeared to his colleagues; but a comparable problem might be indicated by a subject's belief that his behavior was *more* hostile than it appeared,¹ since the latter type of discrepancy may be assumed to indicate guilt-feelings about hostility, or an awareness of hostile feelings, regardless of the extent to which the hostility was expressed in behavior.

Subjects

Subjects, who cooperated on a voluntary basis, were staff members at four Veterans Administration installations. For our correlation on the variable of Money Worries, $N = 32$. For our correlations on the remaining variables, $N = 27$; this was because it had been arbitrarily decided beforehand that behavioral ratings would be utilized for the Self-Understanding scores only when each psychologist could be rated by at least six of his colleagues. Since this condition was not met in one of the installations, data from that installation could be used only for the Money Worries correlation.

The professional level of the sample appears equal to the general level

of practicing psychologists. Nineteen subjects held the Ph.D.; the remainder expected to receive it within a year. The average number of years spent in diagnostic work was five. Several subjects were well-known for original research; two had taught postgraduate courses in Rorschach interpretation.

RESULTS

To explore the question of whether psychologists who are consciously worried about a problem will tend to exaggerate the importance of this problem to a patient, the psychologists' scores on Money Worries were correlated with their diagnostic errors on this variable. The obtained correlation was .45 ($p < .01$).

To investigate the relationship between lack of self-understanding and diagnostic errors, Self-Understanding scores on four variables were correlated with diagnostic errors, regardless of whether the errors involved over-estimation or under-estimation of the importance of the variable in the patient. As Table I shows, the correlation on Hostility is significant ($p < .01$) and other correlations are negligible.

To investigate the psychoanalytic mechanism of projection as a separate defensive process possibly leading to perceptual errors, scores were computed that would express the extent to which the psychologists *under-estimated* the behavioral ratings given them by their colleagues on each variable. These scores were correlated with diagnostic errors on the Jean Test, taken only in the direction of *over-estimation*, that is, over-emphasis

TABLE I. Personal Problems and Diagnostic Errors

	Hostility	Passive Dependency	Depressive Tendencies	Aloofness and Withdrawal
Low self-understanding and diagnostic errors in either direction	.51**	— .05	— .18	— .12
Under-estimation in self and over-estimation in patient	.40*	— .31	— .20	.15

* $p < .05$ (two-tailed test)

** $p < .01$ (two-tailed test)

on the importance of behavior and attitudes related to the variable. Again, as shown in Table I, only the correlation on Hostility approaches significance ($p < .05$).

Since, in both sets of correlations, suggestive results were found only on Hostility, the question arises as to whether these two correlations may not represent substantially the same data, with the same individuals making the major contributions to both covariances. However, an inspection of the computation sheets indicates that this is not the case.

DISCUSSION

As reported above, a relationship ($p < .01$) was found between the psychologists' personal worries about money and a tendency erroneously to ascribe similar anxieties to the patient. Here, the diagnostic errors seem to exemplify assimilative projection of a conscious anxiety. The finding suggests that, in order to be associated with perceptual errors, anxiety need not be unconscious.

Our expectation that lack of self-understanding on specific traits would be associated with diagnostic errors (of either over-estimation or under-estimation) was supported only with regard to the trait of Hostility ($p < .01$). Similarly, our expectation that the defense mechanism of projection might appear as a separate source of diagnostic errors was supported only on Hostility ($p < .05$). Inasmuch as the same individuals did not make the major contributions to the covariances of the two correlations on Hostility, it would appear that personal problems in a specific area of personality may lead to different types of perceptual errors in different individuals.

The significance of the correlations on Hostility is sufficiently high to raise the question of why correlations on the remaining three traits were negligible. Perhaps the methods of this study were better adapted to measure self-understanding on Hos-

tility than on the other three variables. Hostility may become apparent in on-the-job behavior more readily than Passive Dependency, Aloofness and Withdrawal, or Depressive Tendencies. Consequently, the behavioral ratings which were used to obtain measures of self-understanding might have been more valid for the trait of Hostility. It is also possible that, inasmuch as Hostility is perhaps more generally disapproved in our culture than the other traits, lack of self-understanding on this trait might be a sign of greater personal anxiety or conflict than in the case of the other traits.

An alternative explanation may be found in the actual personality of "Jean." As the analyst's description indicates, not only Aloofness and Withdrawal but also Depressive Tendencies and Passive Dependency are more characteristic of Jean than Hostility. Consequently, it may have been difficult for the psychologists to decide whether, in a given situation, Jean would respond by withdrawing, by depressed feelings, or by passive-dependent behavior. These latter variables could, perhaps, be readily confused with one another on the basis of the projective data. On the other hand, since hostile behavior is very uncharacteristic of Jean, it may be that only a psychologist who had personal problems in this area, as indicated by lack of self-understanding, would interpret the tests so as to perceive this particular patient as overtly and consciously hostile. This explanation is rendered more plausible by the fact that a significant correlation was also obtained on the variable of Money Worries, also described as very uncharacteristic of this patient.

These considerations point up sharply a major limitation of the present study: the fact that only a single patient was offered to the psychologists for diagnosis. Ideally, the problem should be further explored by submitting to the psychologists a number of patients with widely-differ-

ent character structures and symptoms. A more intensive study of the individual psychologists, yielding data on areas of difficulty, habitual defense mechanisms, and characteristic modes of perception might also enable sharper and more specific predictions to be made regarding the type and direction of diagnostic errors to be expected from them.

Finally, it should be emphasized that the present study is in no way a validation study of projective tests inasmuch as the psychologists were required to assess the conscious feelings and overt behavior of a patient, a task for which projective techniques are not primarily designed; moreover, they were required to do this with no information except the patient's age and sex. Nor can it be inferred that the psychologist interpreting projective tests is engaging primarily in defense projection of his own anxieties; the two highest correlations obtained, on Money Worries and Hostility, suggest that only 20% and 26% of the variance in diagnostic errors on these respective variables could be considered as related to variance in personal anxiety or lack of self-understanding on the part of the psychologists.

SUMMARY

To explore relationships between personal problems and diagnostic errors of clinical psychologists, a group of Veterans Administration psychologists took a multiple-choice test dealing with the conscious feelings and overt behavior of a psychoanalytic out-patient, whose Rorschach and TAT records were offered to them for study. Objective information about the patient indicated the best answers to each question. Opportunities were provided for errors on five personality variables: Hostility, Passive Dependency, Depressive Tendencies, Aloofness and Withdrawal, and Money Worries. It was found that psychologists who were worried about money

tended erroneously to ascribe similar worries to the patient ($p < .01$; $n = 32$). Psychologists who did not accurately predict the ratings which they would receive from colleagues on their own behavioral Hostility tended to make errors in appraising the patient's Hostility ($p < .01$; $n = 27$). Projection appeared to function as a separate source of error, inasmuch as psychologists who under-estimated their own overt Hostility tended to over-estimate this trait in the patient ($p < .05$; $n = 27$). The remaining three variables did not yield significant correlations.

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Studies in Projection: A Critique

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The term "projection" is one of the most widely used in the field of clinical psychology and personality study. Unfortunately, the concept is one of the most difficult to define, chiefly because projection has been viewed in varying ways by workers in the field. All of the definitions agree to the extent that projection is viewed as the "ascribing of one's own motivations, feelings and behavior on to other persons." Nevertheless, these definitions differ sufficiently so that three different aspects may be described, though none of these is completely independent of the others.

Naive projection. The tendency to project may stem from a limited field of experience and the projector's insensitivity to differences between his limited experience and a novel situation. To project from limited experience implies an attitude whereby the subject says to himself, "Others probably would do just as I would do." Thus, Galton's subjects who utilized visual imagery in some of his memory experiments were quite surprised to learn that other persons used auditory imagery to apprehend the very same material. What is implied is that the subjects utilizing "naive" projection are fully aware of the material which they project. They distort only to the extent that their generalization from themselves to others is in error. Support for this conception of projection comes from Cattell (4), and Horney (7). Horney describes projection in part as "not essentially different from the tendency to assume naively that others feel or react in the same manner as we ourselves do." (7, p. 26).

Rationalized projection. Perception may be distorted by emotional biases or feelings. The projector is often able

to justify these biases on rational grounds. The person buying in the "black market" says therefore in self-justification, "everybody else is doing it." Thus, the "neurotic anxiety" about doing something morally wrong is converted to "objective anxiety" about not getting enough to eat. A rationale is created for otherwise questionable behavior. Cattell (3), approaches this concept in what he calls P.R.E.S. (press required by emotional state) projection. He states that the distortion of perception "makes the real world fit in better with the prevailing emotion of the subject." (3, p. 182).

Classical projection. A situation in which the ego feels threatened is likely to result in the ego's refusing to acknowledge the trait and in the subsequent attribution of the trait to the outside world. The prototype of this categorization stems from the following definition by Freud: "The psyche develops the neurosis of anxiety when it feels itself unequal to the task of mastering (sexual) excitation arising endogenously. That is to say it acts as if it had projected this excitation into the outer world." (1, p. 353).

"Naive" projection is difficult to distinguish from "rationalized" projection. The ability to distinguish the two concepts lies in the confidence with which one is willing to state that perceptual distortion occurred because of a lack of sophistication rather than as a result of more personal motives. Thus, the following definition of projection by Weingarten seems to be capable of representing "naive" and "rationalized" projection concurrently. She sees projection as

a process by which an individual selects and organizes his perception in accordance with his own life experiences and thereby imposes upon the behavior of other people

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an interpretation which reflects the feeling and emotions which he experiences himself (16, p. 402).

"Classical" and "rationalized" projection are similar in that the individual employing either mechanism is unaware that his perception is distorted by personal motives. They differ in that "classical" projection provokes a perceptual threat so great that the reprehensible trait which the person possesses is denied, whereas in "rationalized" projection this same trait is granted entrance into consciousness, but its presence is rationalized by supposedly objective circumstances.

GENERAL STUDIES OF PROJECTION

An appraisal of the literature on projection indicates some support for the use of the concept of projection, but the fact that it is defined differently from author to author makes generalization quite difficult. "Naive" projection seems indicated in the work of Thomsen (14) and Wallen (15). Thomsen showed that in the 1944 presidential election, the majority of persons sampled were of the opinion that the candidate whom they favored would win the election. Wallen reported that 85 per cent (237) of the students in a small residential college were asked to estimate the percentage of students in the college who held certain opinions on each of three current issues (war entry, draft, St. Lawrence seaway), and in addition to state their own views. The data showed that a significant proportion of the subjects overestimated in the direction of their own opinions. This sample represents a fairly clear case of naive projection.

Murray (8), in some of the pioneer work leading to the development of the Thematic Apperception Test, administered two series of fifteen photographs to five girls (eleven years old) at a houseparty. The subjects were asked to rate the maliciousness of the persons shown in the pictures on a nine-point scale. The series was administered once after a normal pleas-

ure experience and once after a game of "murder". There was a significant increase in the degree of maliciousness attributed to the pictures after the game. Some of the girls described themselves as being frightened by the game and one girl had a nightmare as a result of it.

Bellak (1) found that the aggressive word content increased in T.A.T. stories in the last five cards when subjects were severely criticized after receiving the first five cards without comment. Bellak believed that his subjects showed true Freudian ("classical") projection on the T.A.T.; that is, they were unaware or unconscious of aggressive feelings. He reports, however, that when criticized by the examiner for the poor quality of their stories, the subjects *admitted their inability* but offered excuses. They blamed the ambiguity of the pictures and the inadequate instructions for their seemingly "poor" performance. Thus, it seems more than likely that the subjects were producing "rationalized" projection rather than Freudian projection. Their stories reflected hostility of which they apparently were aware, but which they could not express because of the authoritative position of the examiner.

The studies by Murray, and Bellak, seem to indicate the presence of "rationalized" projection. None of the studies has clearly demonstrated the operation of "classical" projection. It may be of value, therefore, to refer to the work of those psychologists who have attempted quantitative measures of projection, and see whether their work contributes to the understanding of the functioning of the concept.

QUANTITATIVE MEASURE OF PROJECTION

Sears (13) was among the first psychologists to utilize a quantitative index of projection. He studied the traits of stinginess, obstinacy, disorderliness and bashfulness by the pooled rating method, using members of several fraternity houses as subjects.

Sears wished to examine the relationship between Freudian ("classical") projection and insight. His main hypothesis was that

Any persistently motivated habit or attitude may be projected if it is sufficiently reprehensible to be refused recognition by the possessor (13, p. 152).

The reprehensibility of the aforementioned traits was obtained by having them rated on a seven-point scale. Projection and insight were measured in the following way:

(1) The degree to which each individual demonstrated a given trait was determined by averaging the combined ratings assigned to him on that trait by other members of his house. (2) The amount of a given trait attributed to others was obtained by averaging the ratings a given individual assigned to the other members. (3) The factor of insight was measured only in terms of its presence or absence (13, p. 153).

A subject was said to possess insight if he rated himself in the same half of the distribution as others rated him, and to lack insight if he rated himself in the other half. Four groupings were obtained, according to possession or non-possession of each trait and insight or non-insight of the individual. Projection would have occurred if for example the members of the stingy non-insightful group saw more stinginess in others than did the group as a whole. This hypothesis, however, was not substantiated. The main findings were: (1) Those who lacked insight attributed to others the trait which they themselves possessed. (2) Projection did not influence the judgments of all subjects on any given trait. It occurred only with those lacking insight. (3) In the group possessing insight, a negative correlation was found between the amount of trait possessed and the amount attributed to others. Sears called this "contrast-formation". Its effect was said to be opposite to that of projection. (4) Projection and "contrast-formation" appeared for both acceptable and non-acceptable (reprehensible) traits.

Certain of these results are subject to question because of inappropriate

statistical treatment. Projection and insight are treated dichotomously. The crudeness of measure due to the lack of a specific quantitative score other than "projected" or "did not project", makes the variables too inaccurate for extensive analysis.

Much more important is the occurrence of a spurious correlation in Sears' data, a fact noted by Rokeach (12) and by Calvin and Holtzman (2). Projection as defined by Sears was a function of the group rating (G) and the difference between the group and self ratings (G-S). Since G appeared in both (G) and (G-S), a spurious correlation was to be expected between (G) and (G-S) even if no actual relationship existed. Hence, a necessity existed for partialling out the effect of G. This was not done and therefore the data are seriously distorted.

Rokeach (12), in a study of beauty at Brooklyn College, had five groups of girls (N of 143) rate each other and themselves within their respective groups. A ten-point scale was used, with 10 representing the acme of beauty at Brooklyn College. A test for projection (naive projection according to the trichotomous division of projection used in this paper) yielded a correlation between rating of the self and rating of others of $-.08 \pm .05$, clearly not significant. Criticizing Sears' method of measuring projection and insight, Rokeach offered a more quantitative index for measuring insight. The formula was,

Insight = $[Bs - 6.07] - [Bsr - Bar]$, where Bs = mean score for beauty attributed to the subject by the group

6.07 = average beauty score for all the subjects

Bsr = the subject's self-rating

Bar = the mean beauty rating which the subject attributes to others.

The raw "insight" scores were then converted to a z score form.

Rokeach in this study used eight groups formed by varying each of these variables in two ways. The vari-

ables were beauty-ugliness by group definition, beauty-ugliness by self-rating, and self over-estimation or self under-estimation. He found that projection (rating by similarity) tended to occur more often in those subjects who were non-insightful in that they tended to deny their beauty. Rating by contrast occurred more often in those subjects who over-estimated their beauty. According to Sears' conclusions, those *possessing insight* should *rate others by contrast*. Rokeach found instead that they rated others neither by similarity nor by contrast, but objectively. In other words, ratings by similarity and contrast were functions of non-insight.

Rokeach's methodology, while an improvement over that of Sears, is not beyond argument. He designated as insightful those subjects who in the beauty group slightly overestimated themselves, and who in the homely group slightly underestimated themselves. His reasoning was that regression toward the mean made the group judgments a slight underestimation of the true score of the individual. But, regression toward the mean is a function of reliability: the greater the reliability, the less the regression toward the mean. Therefore, one may ask, how was it possible for Rokeach to utilize this regression toward the mean when he did not compute the reliability coefficients of the five groups which he used?

In addition to this difficulty, Rokeach's use of insight is not psychologically meaningful. An individual with insight according to his definition is a person who successfully judges his rank position in a group with regard to the physical attribute of beauty. The psychologically oriented reader would probably be more interested in knowing the feeling tone of a girl with respect to her physical attributes, and whether or not she possessed insight into her feelings about being either beautiful or ugly.

Weingarten (16) had a group of seventy-four college students write

autobiographies of themselves. Two judges rated these subjects on tension with regard to self, family, and social environment. They rated them also on self-insight. The latter was a global rating applying to all areas. The ratings were on a seven-point scale and were done entirely from the autobiographies. The subjects were then given a series of seventy-five statements describing behavioral incidents, and asked to interpret the psychological import of these incidents. The judges rated these interpretations in the same manner as the autobiographies. According to Sears' hypothesis, the correlation between ratings of the judges and the subjects' interpretations of the seventy-five statements should be higher for the non-insightful group than for the insightful one. The actual results were:

	High Insight (N=24)	Low Insight (N=33)
Self.....	.41	.38
Family.....	.00	.40
Social.....	.15	.21

Weingarten concluded that people project less with insight than without it, but that they project, nevertheless. No contrast-formation was found. In view of the specificity of projection according to her findings, it is unfortunate that insight was rated by the two judges globally and not for each specific area. Also, judging by means of an autobiography introduced a verbal factor which distorted the findings to an unknown degree.

Hastorf and Bender (6), using a more definitive measure of projection, conducted a study in which they asked fifty college students to fill out an adjustment scale for themselves and another form (same scale) for how they thought their friends would rate themselves. They defined the following measures:

Projection: The total item-by-item deviation of the forecaster's own responses from his predictions for an associate. *Empathy*: The deviation between the forecaster's prediction for his associate and his associate's self-

rating. *Refined Empathy*: Empathy-projection. *Similarity*: Deviation of the forecaster's self-rating from his associate's self-rating.

The following correlations were obtained:

	r
Projection vs. Similarity.....	.32
Projection vs. Empathy.....	.37
Projection vs. Refined Empathy.....	-.58

In a study of twenty-nine married couples, using the same measure of Projection and Empathy described above, Cowden (5) also found a substantial correlation between these two variables. The results of both studies seem to imply that the more similar the personalities of two individuals, the more likely is projection apt to occur when one individual attempts to evaluate the personality of the other. The ability to see an individual as he sees himself (empathy) is related to the tendency toward projection. If, however, the projection component is removed from the score of Empathy, then a negative relationship exists between these two variables.

Fortunately it is not necessary to speculate upon the psychological meaning of these conclusions, since they are an artifact of the statistical procedure. A contributing factor to the spurious relationship between projection and empathy as defined above is the fact that each of these scores had an identical component (prediction for an associate). Hence, a spurious relationship would have occurred even if there were no actual relationship between the two variables. The other scores illustrate similar common components when they are correlated with each other. An objection might also be made on purely logical grounds to the assumption that projection has occurred if a person attributes a trait to another which he possesses himself. The possibility exists that both persons may actually possess the trait. The projection measures used by Cowden, and Hastorf and Bender therefore, shed little light upon the relationship of projection to such varia-

bles as empathy and similarity.

Norman and Ainsworth (11) reported a study in which they asked seventy-four college students to rate themselves and to estimate how other students would rate themselves on the GAMIN, a factorially determined personality scale. The variables projection, empathy, and reality were measured in the following manner:

Projection: "A" says that he does not possess a certain trait (he answers one of the questions on the GAMIN in a negative way). "A" says that other students of his own age and sex do possess that trait. Of the remaining members of the group (seventy-three in number), 51 per cent or more say that they do *not* possess the trait in question.

Empathy: "A" says that other students of his own age and sex do possess a certain trait. 51 per cent or more of the group say that they *do* possess that trait (i.e., they answer the question in the same way as the subject "A" says they will).

Reality: "A" says that other students of his own age and sex do possess a certain trait. Of the remaining group, 51 per cent or more state that *other students do* possess that trait.

The authors obtained the following results regarding projection:

	r
Projection vs. Reality.....	-.41
Projection vs. Empathy.....	-.65

The results indicate that projection was negatively related to the ability of students to judge how other students viewed themselves and others. Projection was thus seen to be a reality-distorting mechanism. Nevertheless, there are weaknesses in the methodology which vitiate these conclusions.

The main criticism of Norman and Ainsworth's study concerns their use of the subject's self-rating as an objective criterion of whether or not that subject possessed a given trait. This appears hazardous, particularly in a study measuring projection. Since the

criterion for the group was 51 per cent or more, if only 2 per cent of the subjects projected, the item would be placed incorrectly and thus would distort the measure of projection. Another omission is the absence of any reliability coefficients for the various judgments. A third criticism is that some of the traits on the GAMIN have moderately high intercorrelations, thus lending a degree of spuriousness to the results. A fourth criticism dealt with in a separate article (9), is that in correlating projection with empathy, one has to deal with a common component in both measures (others say they possess the trait) which adds a degree of spuriousness to the correlation between these two measures.

Murstein (10) defined projection as the "ascribing of one's own motivations, feelings and behavior onto other persons". Examining the three concepts of projection described within this paper, he found support for the manifestation of "rationalized" projection of hostility on the Rorschach through analysis of the content of the protocols. Under ego-threatening conditions, using another measure of projection, none of the concepts of projection served as an adequate explanation of the results. He found that persons perceiving themselves as friendly regardless of whether or not they were objectively justified, projected hostility as a result of ego-threat. These results were shown to be readily amenable to a phenomenological explanation of reaction to threat to the "self".

In reviewing previous research, one may conclude that highly equivocal results have been obtained regarding the operation of projection. The difficulty in drawing conclusions stems from the fact that projection has been viewed conceptually in varying ways. Rokeach, Norman and Ainsworth, and Sears used a "classical" conception of projection in their studies, while Weingarten, Hastorf and Bender, and Cowden, used either a "rationalized"

or "naive" conception. This undoubtedly contributed to the contradictory results whereby Cowden, and Hastorf and Bender, found a positive relationship between "projection" and "empathy", while Norman and Ainsworth found these same variables to be negatively related. The statistical errors in the measurement of the various concepts of projection also add to the difficulty in drawing conclusions concerning the relationship between projection and other concepts such as "empathy", "similarity", "reality", and "insight".

One of the chief difficulties in working with discrepancy scores has been the spuriousness due to common components in the different measures utilized. This difficulty can be surmounted if one is working with a large group of persons who know each other. For example, if one wishes to determine whether hostile non-insightful persons project more hostility as a result of ego-threat than hostile insightful ones, the groups may be obtained in the following manner:

The group is asked to rank each other on the trait of hostility including their self-ranking.² The mean of the rankings of the group may be obtained for each person and designated as his G score. The persons self-ranking may be designated as his S score. A hostile non-insightful person would be one who was quite hostile but who, lacking insight, perceived himself as quite friendly. Since all measurement is composed of a true and error component, it is necessary to take account of the size of error occurring in the rankings. Hence the reliability of the group judgments may be obtained by randomly splitting the group judgments on each person into two halves, computing the product-moment correlation and then estimating the full length reliability by means of the

² The author wishes to express his indebtedness to Dr. Wayne H. Holtzman, who first described to the author much of the statistical rationale for this method.

Spearman-Brown "prophecy" formula

$$R = \frac{2r_{12}}{1 + r_{12}}$$

where R = full length reliability
 r_{12} = correlation between the two halves of the group.

The S reliability may be obtained by having the group re-rank each other at some later date. If this is unfeasible, the S reliability may be assumed to be equal to at least .90 as Calvin and Holtzman have indicated (2).

The next step is to decide arbitrarily the risk of error to be run of mistakenly calling a non-hostile person hostile, or a non-friendly person friendly. If the risk is to be no greater than .05 and the distribution of the trait of hostility may be assumed to be normal, then the selection criteria for a hostile non-insightful person becomes

$$G \geq 1.96 SE_G + M_G \text{ and } S \geq 1.96 SE_S - M_S \text{ where}$$

G = the magnitude of a person's group ranking necessary in order to consider him hostile.

S = the magnitude of a person's self ranking necessary in order to consider him friendly.

SE_G = standard error of group rankings.

SE_S = standard error of self rankings.

M_G = mean of group rankings for total population.

M_S = mean of self rankings for total population.

Selection of hostile-insightful persons would be similar except that the person's self ranking would have to be considerably above the mean of all the self-rankings for the person to have insight into his hostility. Hence, $G \geq 1.96 SE_G + M_G$ and $S \geq 1.96 SE_S + M_S$

An environment suitable for the projection of hostility in a college environment may be created in the following manner as was done by Murstein (10):

A population of hostile-insightful,

hostile non-insightful, friendly-insightful, and friendly non-insightful persons are obtained, and each group is divided into two matched groups. Sub-Group A of each of the four experimental groups meets with a counsellor who, in a friendly manner, informs the group that a test which they have just taken, indicates from an analysis of the content, that they are "hostile" persons. Following this interpretation, the subject is asked to fill out anonymously and drop into a sealed box a rating sheet on the counsellor's competence in accordance with some research that the Psychology Department is alleged to be conducting. The counsellor is outside the room while the subject fills out the sheet which has to do with the manner in which he conducted the interview, rather than the content of what he said. Sub-Group B of each experimental group goes through the same procedure except that they receive a "friendly" interpretation. A projective index for each group may then be obtained by subtracting the mean of the rating scores of the subjects within each experimental group receiving a "friendly" interpretation from those receiving a "hostile" one. Murstein found that the possession of insight of itself was not related to the mechanism of projection, but the "phenomenological self" served to explain the operation of this mechanism.

It is the hope of the author that the various shades of meaning which the term projection imbues may be defined operationally, and subjected to experimental investigation. The model presented in this paper has been sketched toward that goal.

CONCLUSIONS

Some of the experimental attempts to measure projection were discussed. The many different findings resulting from these studies were held to be a result of: 1) the different conceptions of the term "projection", and hence different statistical measures used to arrive at an estimate of the extent of

projection; 2) the statistical errors of the measures used to detect projection.

A new method of measuring projection was described which used pooled rankings as a means of assessing personalities, and cutting scores based on consideration of the standard errors of these judgments to select extreme personalities.

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Some Relationships between Rorschach's Experience Balance and Rosenzweig's Frustration-Aggression Patterns

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At the time that Rorschach developed his theories and technique for exploring personality, American psychologists had not yet begun their studies on frustration and aggression. This latter approach to the understanding of personality has developed independently. Nor have Rorschach students attempted to relate the two approaches. However, what have appeared as two entirely different — if not divergent — concepts might be included in a broader conceptual framework in which perception and personality are inter-related. In essence, Rorschach's concept of Experience Balance — in this writer's view (2) — deals with generalized perceptual sets or attitudes which delimit the individual's reactions. Frustration-aggression theory, as outlined by Rosenzweig (4) also deals with attitudes, i.e. toward handling threatening stimuli and toward aggressive expression.

Rorschach theory distinguishes two general methods of perceiving, labeled intratension and extratension. The former is primarily an intra-personal set, in which stimuli are interpreted by the individual on the basis of such experiences as dreams, hypotheses, impulses, memories, etc. Extratension is an empirical mode of perceiving, following upon extrapersonal, environmental stimulation. In his Picture-Frustration Study, Rosenzweig also contrasts the environmental with the intrapersonal, in his concepts of the

mode of expressing aggression (obstacle-dominated vs. need-persistent) and of the direction or object of aggression (extrapunitive and intrapunitive). Both Rorschach and Rosenzweig account for an impersonal, emotionally neutral set: Rorschach speaks of the coarctate personality who ignores both sources of emotional experience; Rosenzweig similarly provides for an ego-defensive reaction and an impunitive reaction to frustration, a denial of feeling. The frustration-aggression scheme does not directly posit a reaction analogous to Rorschach's ambiequal perceptual type, but it does allow for ambivalent or mixed reactions to frustration.²

Despite the analogous theoretical relationships between these two sets of concepts, certain *a priori* difficulties arise in associating them. Rorschach correctly cautioned against prediction of specific reactions from his general perceptual modes (a caution which his followers frequently violate). Rosenzweig poses the question of "levels" of personality functioning (5), wondering whether the responses to the P-F Study actually are projections of underlying attitudes. The major point of distinction here is that Rorschach's concepts deal chiefly with modes of *perception* — not response (in Rorschach's words, *Erleben*, not *Leben*). Rosenzweig is concerned mainly with categorizing *responses* to frustration, regardless of the source of stimulation.

Thus it was not possible to state on theoretical grounds exactly which reactions to frustration might be expected to follow from a certain perceptual mode. This study perforce began only

¹ Previously at Washington University School of Medicine, St. Louis, where the data for this study were collected and analyzed. The author was fortunate to have the astute comments of Professor Rosenzweig in preparing this paper, which were greatly appreciated. Naturally the author is responsible for embodiment of Professor Rosenzweig's contributions in the discussion of results.

² For further details of the Rosenzweig classification schema and scoring see (6).

with the empirical hypothesis that Rorschach's perceptual modes would be differentiated by Rosenzweig's modes of reaction to frustration. It was hoped, of course, that any such empirically determined relationships would further expand and delineate the meaning of both sets of concepts.

SAMPLE AND PROCEDURE

From the population of adult outpatients at the Washington University Clinics, 124 cases were drawn to whom both the Rorschach Technique and the Rosenzweig Picture-Frustration Study (adult form) had been administered in routine clinical examination. Only those P-F's were accepted which were completely filled out and which could be scored without ambiguity. However, this study was concerned only with the principal six categories and nine factors (6). The Rorschachs had already been scored and categorized as to EB type in a prior study (2). The sample drawn here contained 28 extratensive (E), 37 intratensive (I), 28 ambiequal (A), and 31 coarctate (C) records. The reader is referred to this prior study (2) for the specific character of the population from which these records were drawn, for details of the Rorschach scoring criteria, and for the procedure of determining the EB classifications. This first study also indicated that such population characteristics as race, sex, psychiatric status and age (within the adult years) were not differentiating factors. Relationships between IQ and EB were also determined. All subjects in the current study were of average or higher intelligence.

For each of the P-F scoring categories, the upper and lower quartiles were determined for the total sample of 124 subjects. The frequencies within these 3 P-F quartile groups, (above Q3, Q3 - Q1, below Q1), become the basis for comparing the four Rorschach perceptual types, each against the sum of the other three, on 3 x 2 Chi-Square Tables. Contrasting the

four Rorschach EB groups, and the combination of Extratensive + Intratensive versus Coarctate + Ambiequal on 15 P-F variables required 75 comparisons.

RESULTS

The results of this analysis may be summarized as follows:

1. The extratensive group showed
 - a) more high scores on OD (the overall obstacle-dominance score) than any other EB group (Chi Square 7.05, 2 df, P less than .05), and
 - b) fewer high scores on *e* (extra-punitive need-persistence) than any other EB group (Chi Square 12.95, 2 df, P less than .01).
2. The intratensive group showed
 - a) more high scores on overall need persistence (NP) than any other EB group (Chi Square 5.47, 2 df, P less than .10), and
 - b) more high scores on *e* than any other EB group (Chi Square 4.69, 2 df, P less than .10). (Contrasted with the extratensive group only on *e*, (Chi Square 42.11, 2 df, P less than .01)).
3. The coarctate and ambiequal groups taken together showed fewer low scores on overall ego-defensiveness (ED) than the intratensive-extratensive extremes of the experience balance groups (Chi Square 13.40, 6 df, P less than .05).
4. The coarctate group had more frequent high scores and the ambiequal group more low scores on the impunitive ego-defensive reaction (P-F variable "M"). (Chi Square 5.00, 2 df, P less than .10).

DISCUSSION

From a rigidly actuarial point of view the above results are not definitive; out of 75 comparisons at least the total number of differences obtained can be expected by chance. Because this study was exploratory, examining only the hypothesis of overall relationship between two sets of

projective technique constructs, it was deemed necessary to calculate all possible differences. However, despite the basic difficulties in predicting expected differences, it must be granted that the total number of differences to be expected would, according to either Rorschach's or Rosenzweig's theories, be far less than that called for statistically. Indeed, if very many differences had been obtained, it would have been difficult to account for them theoretically. As will be discussed below, the lack of difference in some instances may be interpreted as strengthening the definition of the EB types. The central question is thus whether such differences as were obtained are congruent with Rorschach theory.

The results suggest that the individual's mode of perception is most likely to call forth a parallel mode of reaction to frustration. The extratensive person is concerned with the immediate fact of the external obstacle: the OD response. The obstacle-dominated response may be considered as having at least three characteristics. First, there is the lack of control of reaction, in that affect is not withheld nor delayed. Second, obstacle-dominance means that the person has no premeditated reaction, no "set" but is able to react only after the stimulus situation has occurred. A similar lack of planning in the intellectual behavior of the extratensive person was previously demonstrated (2). Third, the OD response is primarily an affective expression, not a solution to the frustrating barrier.

This last aspect of obstacle-dominance in extratensivity is not commonly recognized. Indeed, many Rorschach interpreters presume that because the extratensive person cannot withhold affect, he also cannot withhold direct action. Similarly, direct expression of feelings of frustration might be interpreted as implying aggressive reaction. Actually, such an assumption is not a necessary adjunct to either Rorschach's or Rosenzweig's theories. In attitudes expressed by

MMPI responses (3), the extratensive group disavow direct impulse release and are concerned chiefly with constancy of the environment. In their P-F responses, the extratensive group is no more extrapunitive, does not direct aggression against the environment any more or less, than the other perceptual types. In fact the extratensive person is less likely to demand a solution from the environment, as indicated by a more frequent low *e* score. This latter finding may be taken as further confirmation of the extratensive's need for a constant environment as a basis for perception.

The response pattern of the intratensive group on the P-F also is consistent with their respective mode of perception. The intratensive group is better able to withhold immediate reaction to frustration, as indicated by more frequent high "need-persistent" scores. The most outstanding response of the intratensive group is the *e* or "you do it" response. This factor especially differentiates the intratensive group from the extratensive group. Although this result might not have been predicted directly from Rorschach theory, it may be seen as strengthening the interpretation of the movement-dominated Rorschach. In the Rosenzweig *e* response not only is the solution delayed, but the obligation for handling chiefly extrapersonal stimuli is also deferred and wished back onto the environment. The intratensive's unwillingness to deal with stimuli outside of himself is more than a simple delay of affective display. The intratensive is thinking in terms of a solution for the barrier—but only *thinking* of it, being unwilling to take action.

In this connection, some findings from Taylor's study (7) on repression of recall are worthy of note. Taylor's results showed that the higher the "need-persistent" score, the lower the total recall of his problem tasks. Taylor, when he asked his S's to introspect, discovered that the S's with high "need-persistent" scores continued to

think about the unsolved puzzles, forgetting more puzzles in their preoccupation with the frustration. Taylor interpreted the "need-persistent" response, therefore, as a fantasy solution rather than an actual carrying out of a task. It is, of course, fantasy solution which Rorschach also emphasized in interpretation of the movement response to the Rorschach.

Altogether the above results indicate that in their responses to frustration, neither the extratensive group nor the intratensive group emphasize an active solution. This conclusion receives additional support if instead of contrasting only the two directions of the experience balance, the dimension of direction be compared with the dimension of intensity or dilation, the coarctate-ambiequal dimension³. Thus, although the intratensive and extratensive groups do not differ between themselves in the use of ego-defensive reactions to frustration, these two extremes as a group respond less frequently in an ego-defensive manner than do those individuals who are neither definitely intratensive nor extratensive.

This frequent ego-defensive reaction of the ambiequal and coarctate groups lends more specificity to this center section of the experience balance continuum than a mere absence of direction of perception. Such ego defense suggests that when the individual is neither predominately dependent on the environment nor wrapped up in his own preoccupations, he is more likely to initiate a solution to or a defense against the frustration. The coarctate person, unable to accept much emotional stimulation of either variety, defends his ego chiefly by denying the fact of frustration—as shown by the more frequently high impunitive scores. The

ambiequal individuals, taking into account both intra-personal attitudes and environmental press, appear to have stronger egos, showing much less need to deny emotional discomfort. It might be expected that the ambiequal group would be capable of direct solution of the frustrating situation, but these results do not show them taking such a positive stand. However, it should be noted that the sample is of neurotic patients, whose inability directly to face frustration is commonly recognized.

SUMMARY

Theoretical considerations suggested that the modes of emotional perception posited for Rorschach's experience balance types might have correlative or even parallel modes of reaction to frustration, as described in Rosenzweig's schematic classification. A sample of 124 adult psychiatric patients was divided into four groups on the basis of their movement-color scores on the Rorschach. Using the upper and lower quartile points as cutting scores on the P-F, the P-F reactions of the four Rorschach groups were contrasted on Chi-Square tables.

The results, though statistically not definitive, are congruent with the general hypothesis that Rorschach's perceptual modes have parallel modes of reaction to frustration. The extratensive group, presumed to be dependent on environmental stimuli, showed a predominance of obstacle domination on the P-F, interpreted as an expression of affect without an attempt at solution. In contrast, the intratensive group was marked by more frequent need-persistent reactions, suggesting a delay of solution, particularly of the *e* type (need-persistent, extrapunitive) where the handling of the frustration is sloughed off. This delayed solution emphasizes the intratensive's rejection of environmental press and the use of a fantasy solution rather than an active defense. Individuals not definitely intratensive nor extratensive defend their egos more directly. Per-

³ As Hertz (1) makes clear, Rorschach actually posited two dimensions in his EB, the extraversion-intraversion continuum being the direction in which emotional perception is focused and the coarctate-ambiequal continuum describing the extent of recognition of emotional stimuli in perception.

ceptually coarctate persons seek to deny frustration. The opposite group, the ambiequals, had less need to deny and employed a variety of reactions. The fact that this latter group was not dominated by any one reaction is consistent with the theory that recognition of both intrapersonal and extrapersonal stimulation permits greater flexibility of response.

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Spontaneous Projection of Meaningful Forms¹

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Projective tests, and especially the Rorschach, are based on the assumption that there is a tendency in man to project forms which have meaning for him into percepts which do not. He brings some, however faulty, system and order into the chaos by peopling it with the creatures of his imagination.

The word "projection", which is at the center of this, has long been used in two meanings. This ambiguity has been critically commented upon, for instance by Rapaport (15, p. 338). The term in its narrower sense refers to a defense mechanism, the projection of an "objectionable internal tendency" (19, p. 279), implying that "what is cast upon another is considered undesirable by the one who projects" (9, article: Projection). The wider meaning covers any "externalized expression of one's private inner world through selective perception and organization of the surrounding world" (19, p. 280), the act of giving meaning to "a stimulus situation which has no inherent compelling organization" (10, p. 211). The word shall be used in this paper in this wider sense — in conformity with the usage established by Frank (5, pp. 46-47), as he was the one who introduced the term "projective methods" — but limited to projection in response to an external sensation.

The ability and willingness to project which most subjects display when shown the Rorschach cards, i.e., when projection is solicited, must lead us to postulate that the same would

occur spontaneously, though presumably less readily. This is indeed the case. People will remark that certain clouds, rocks, etc. strikingly resemble specific human or animal figures or artifacts.

This occurrence is so widespread and well known that it is scarcely felt to need documentation. Werner developed the concept of "physiognomic perception" which can be considered the matrix of spontaneous projection (23, ch. II), but little scientific study has been devoted to the latter. This dearth may also be due to the fact that the problem does not lend itself to experimentation: it is difficult to see how an experiment could be designed to explore spontaneous projection without destroying the very feature that is to be investigated, spontaneity. A warning against the falsification of the results that unavoidably springs from suggestion has been sounded centuries before Rorschach developed his test:

Hamlet: Do you see yonder cloud that's almost in shape of a camel?

Polonius: By the mass, and 'tis like a camel indeed.

H.: Methinks it is like a weasel.

P.: It is back'd like a weasel.

H.: Or like a whale?

P.: Very like a whale.

H.: Then will I come to my mother by and by (21, Act III).

While it is in the nature of things impossible to elicit spontaneous projection, and while it would be a rare coincidence if we had a chance to observe it at work, we nevertheless have records of spontaneous projection. They differ according to the nature of the object onto which projection has taken place.

These objects may be permanent—especially topographical features; projection onto them is recorded in the names given them. Or, they may be

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fleeting — clouds, flames, smoke, swirling waters, etc.; projection onto these is recorded in poetry, autobiographical writings, and historical or purportedly historical anecdotes.

Names are needed for things which last while there is seldom any incentive to record the projections thrown on a less steady object. We might therefore expect the records referring to permanent objects to be more numerous. They are, though neither of the two types is very abundant. We might expect on the other hand to find the records of projection onto fleeting objects to be psychologically more rewarding — because experience with projective tests has shown that the less structured picture evokes a stronger emotional response — and this also is found to be so.

The large majority of topographic names are either devoid of any relation to the feature named but are memorials to individuals, historic events, or abstract ideas (Mt. Washington, Hudson Bay, Sacramento River); or else they are merely descriptive of color, shape, size, location, etc. (Green River, Lake Superior, Oak Knoll, Long Island). An element of projection enters when the name does not simply describe but implies a comparison: "Bald Mountain" would fall in the former category, "Bald Head" into the latter. Projection is here used consciously and remains on a commonplace level.

In contrast to our more general expectation, we might expect on this level to find projection more frequently stimulated by features of more striking form — rocks, for instance — than by such more nearly shapeless things as meadows or ponds. This expectation is fulfilled by the finding that while those descriptive-projective names as we might call them are upon the whole rather rare they are given with a fair degree of frequency to some of the more outstanding mountain tops.

Forty-six peaks of above 4,000 ft.

have been surveyed and named in the Adirondacks. Of these, eight carry names which appear descriptive-projective: Haystack, Gothics, Nipple Top, Saddleback, Table Top, Upper Wolf Jaw, Lower Wolf Jaw, Sawteeth (8, pp. 88-89).

Bolder and more imaginative projection than in most of these names does occur but is naturally a highly individual matter. It rarely survives the levelling influence of censorship (the word here used in both its legal and its psychoanalytic meaning). This is understandable since topographic names can only be made to stick by consensus, and sometimes by authority. The process can occasionally be observed at work. The U. S. Board on Geographic names has since its inception looked at it with favor.

"... there is distinctly traceable a development of geographic nomenclature, which is on the whole proceeding in a beneficial direction. Its tendency is towards the discarding of objectionable names and adoption of pleasing ones, . . ." (4, p. 5).

Which names are "objectionable" and which are "pleasing"? As the pioneers named the mountains of the West, this is reported to have happened:

"They could often use mountains as signposts; those great bare mountains took many strange shapes. In the East there had been Round Top, and Haystack, and Sugarloaf, but in the West many more arose, so that a man could tell what mountain it was by merely looking at it. Thus came Saddle Mountain, and Broken Top; Castle Peak, Court House Rock and Chimney Rock, Pillar Peak; Two Top, Dome, and Coffin. So also came The Rabbit's Ears and The Deer's Ears, and Mulehead Butte. Since the forces of nature saw fit to leave many hills in the shape of a woman's breast, those simple men knew no reason not to name them so. The French said *mamelle* and *teton* as common words, and the Americans named Nipple Butte and Tit Butte. But a sharply upstanding rock might have a corresponding male name" (22, p. 222).

The two elevations in the center of San Francisco, now known as Twin Peaks, were at one time called *los pechos de la chola* (the breasts of the

Indian maiden). Many a visitor looking toward these hills from the foot of Market Street might find the older name strikingly apt — if the silhouette were part of a Rorschach blot. But it isn't, and whether many San Franciscans would think it a fit name for a landmark of their city is a different question.

Names with anal connotations may get even more gingerly treatment:

"Will Barnes, in his excellent dictionary of Arizona names, records of one of them:

A rather vulgar origin. At a distance the peak resembles the edifice in the rear of most country dwellings. Early miners so called it for this resemblance.

On a General Land Office map of 1921 the name was allowed officially to stand as S.H. Mountain" (l.c., p. 378).

Such scenic attractions as mountain resorts, canyons, and caves often sport Profile Rocks and similar landmarks. Geared to the tourist trade, they are as a rule innocuous and genteel,

Shapes which are less permanent than stone but more so than clouds are formed by snow. Projection here may represent a transition from projections onto rocks and mountains to those stimulated by fleeting objects. Snow lends itself to the shaping of snowmen, or such figures may be seen rather than made:

The old familiar sights of ours
Took marvellous shapes; strange
domes and towers

Rose up . . .

The bridle-post an old man sat
With loose-flung coat and high
cocked hat; (24, 1.54-61).

Emerson speaks in "The Snow-Storm" of "the frolic architecture of the snow"; "A swan-like form invests the hidden thorn; . . . A tapering turret overtops the work. . . ." (3, p. 31).

As we proceed from the semipermanent features like snow to those that have no permanence at all, we are entering a world of quite different feeling tone:

Ant.: Sometime we see a cloud
that's dragonish;

A vapor sometime like a bear, a
lion,

A tower'd citadel, a pendent rock,
A forked mountain, or blue promontory

With trees upon't, that nod unto
the world,

And mock our eyes with air: thou
hast seen these signs;

They are black vesper's pageants
(20, Act IV).

As long as we dealt with mountains, there were no pageants — which is natural as stone is rigid; but there were no black vespers either, which is more remarkable.

Goethe wrote a poem on a night ride in which this image occurs:

Now could I see like some huge
giant

the haze-enveloped oak-tree rise,
While from the thicket stared
defiant

The darkness with its hundred eyes
(7).

The word "defiant" happens to be the translator's; Goethe does not have it, but his original darkness stares "out of hundred black eyes". Another poem of his, the famous *Erkönig*, elaborates the same projective motif into something very much grander. An analysis of this splendid ballad would be outside the scope of this paper.

More modern and prosaic parallels are not hard to find. A recent journalistic study of a transatlantic flight relates how the plane encountered some atmospheric disturbance and how the pilot reacted:

"Now that Blackburn had a little weather to deal with, he seemed to be enjoying himself. Scanning the clouds, which then stood scattered about in a slowly brightening sky, he pointed out their resemblance to things and people. Off to one side, a cloud reminded him of a hunting dog on a point, off to the other was the figure of a bearded man, while up ahead stood a church with a steeple rising almost out of sight. As the plane neared the church-shaped cloud, Blackburn said, "You've got to be religious if you fly. You can't help it. You know what they said in the war— there are no atheists in

foxholes. Well, it's an extension of that." . . ."
(1, p. 71).

A reader with some Rorschach experience must be permitted to be a bit skeptical about the statement that the pilot "seemed to be enjoying himself". The hunting dog and the bearded man may raise different suspicions, and the steeple might at first seem placid enough, but the tieup with the foxholes is telling. Projection in this case, even more clearly than in that of Shakespeare's and Goethe's poetry, is motivated by anxiety and at the same time a defense against it.

Though materially quite similar to clouds, smoke has always had a different effect on man. To be granted once more to see the smoke rising from the ancestral hearth has been the prayer of the exile since the days of Homer. Projections onto smoke are apt to be more tonic than those onto clouds. The loss of the ability to form them may be regretted:

I'm fifty odd—my hair is thin—
My purse is stout, and so am I;
I take not half the old comfort in
The best *Perfecto* I can buy,—
And visions I no longer see,
And smoke is only smoke to me,
Now I am old (17, p. 68).

The significance of smoke is here perhaps due to its connection with a (however mild) narcotic, and in general to its tendency to rise which must seem more meaningful than the aimless drift of clouds, and to its connotation of fire. When we look for instances of projection onto fire, we are again entering a quite different realm.

Plutarch relates that Tarchetius, king of Alba Longa, saw a phallus rise in the flames of his fireplace. An Etruscan oracle interpreted the apparition as the announcement that this phallus would mate with a virgin and sire a man of marvellous valor and luck. The virgin was the king's daughter Rea Silvia who was impregnated by Mars and became the mother of Romulus, the founder of Rome

(16). Closely parallel is the legend of Ocrisia, the mother of Servius Tullius, a later Roman King (6).

To let such stories pass into the history books obviously required a certain uncouth naivete. Two thousand years are a good long time for censorship to work, and a citizen of Renaissance Italy who handles the violin instead of the sword would not indulge in anything so crude. Writing in the sixteenth century, Benvenuto Cellini recorded this projection of his father's:

"When I was about five years old, my father happened to be in our basement . . . where a good fire of oaken logs was burning. He had a viola in his hand and was playing and singing all alone by the fire. It was very cold. As he gazed into the fire, he chanced to see in the middle of the hottest flames a little creature like a lizard which was sporting about in the strongest flames. He instantly perceived what it was, had my sister and me called, pointed it out to us children and gave me a violent box on the ear which immediately made me cry. He comforted me kindly. "Sonny," he said, "I did not hit you for any wrong you did, my darling, but only to make you remember that this lizard which you saw in the fire is a salamander, a creature which has never been seen by anyone else of whom we have a true report." And so he kissed me and gave me some pennies" (2).

There are still other phenomena that give rise to spontaneous projection—the stars for instance, since the names of the constellations are largely descriptive-projective or even purely projective designations. However, for a first survey of a field which has been lying rather fallow for some time, the examples which we have cited may suffice. They show how vigorous and manifold spontaneous projection is, thus providing a sound anchorage for that projective activity which is of primary interest to the psychologist, which is solicited rather than spontaneous projection.

Solicited projection also can work with different raw materials. It can be and has been used for other purposes than testing. It has been made the basis of at least one commercial game (18). It can be pressed into the

service of magic. While many popular methods of soothsaying such as palmistry and reading of tea leaves, utilize geometric features of patterns rather than projective configurations, this is not true of all methods.

If you melt a spoonful of lead over a flame and pour it quickly into a bowl of cold water, it will harden into strange shapes, very suitable for projection. When I was a child, this was part of the program of many New Year's Eve parties. Everybody would take his turn pouring lead, and then all guests would interpret the shape; this would be his fortune in the new year. I used to look forward to this almost as to the Easter eggs and the Christmas tree. I was not encouraged to think of lead pouring as anything but a game, but I am not sure that my elders looked at it in quite the same way. The temptation to concede to the prediction of the lead at least a tentative bit of belief must have been strong, for lead pouring — technically known as molybdomancy (14) — offers an opportunity to practice about the neatest trick of self-deception in the whole tricky repertoire of prophecy: What you feed in is your projection, i.e. naturally what you wish to see. When you get it back it has been raised to the dignity of an oracle; though the prediction is far from assured to come true, it is virtually guaranteed to please you.

The history of molybdomancy which is characterized by its downgrading from an oracular ritual to a parlor game, is typical of the fate of magic in advancing civilization and also of the fate of projection: While the ancient anecdotes of phallic images emerging from fire show that people living in a more primitive culture took projection quite seriously — i.e. they believed that they actually saw what they projected — modern persons are not apt to abandon themselves to projection; they retain the realization, stereotyped in the formula usually employed by Rorschach subjects, "this looks like . . .", that pro-

jection is not identification. This feature may be used to differentiate projection from misperception.

The place of molybdomancy is also to be located in the uncertain border area between spontaneous and solicited projection — uncertain because any spontaneous projection may become solicited if the one who projects invites others to follow his example. Shakespeare's Hamlet did so for the purpose of humiliating Polonius. Leonardo da Vinci had a more didactic purpose:

"I will not refrain from setting among these principles a new device for consideration which, although it may appear trivial and almost ludicrous, is nevertheless of great utility in rousing the mind to various inventions. And this is that if you look at any walls spotted with various stains or with a mixture of different kinds of stones, if you are about to invent some scene you will be able to see in it a resemblance to various different landscapes adorned with mountains, rivers, rocks, trees, plains, wide valleys and various groups of hills. You will also be able to see diverse combats and figures in quick movement, and strange expressions of faces . . . it comes about as it does with the sound of bells, in whose clanging you may discover every name and word you can imagine" (12, pp. 873-874).

He had been led to fine inventions in this manner, Leonardo goes on to say (11, p. 285), noting that though the blot may lack perfection, the movement seen in it may be perfect. It shouldn't be too much asked, he thinks, of a serious student of painting, "to stop sometimes and look into the stains of walls, or the ashes of a fire, or clouds, or mud, or like things" (13, p. 51).

Modern science, which Leonardo helped found, has replaced the playfulness of genius with the sober accountability of standardized stimuli. It is still built on the old foundations, and spontaneous projection still furnishes the basic energy which projective methods utilize.

SUMMARY

Projective tests utilize a tendency toward spontaneous projection which

may be ubiquitous but has not been explored very much. Though difficult to demonstrate experimentally, spontaneous projection can be traced in autobiographical and imaginative literature. Examples are brought which show difference in feeling tone depending on the object onto which projection takes place: conventional or ribald on topographical features, gay on snow, anxious on clouds, pensive on smoke, phallic on fire. There are transitions from spontaneous to solicited projection; they have been used in magic, games, and art.

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Personality Maturity of Kibbutz (Israeli Collective Settlement) and Non-Kibbutz Children as Reflected in Rorschach Findings

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More than a decade ago a series of studies published by Goldfarb (7, 8) dealt in detail with the deleterious effects of early maternal deprivation and institutionalization upon later behavior of children and their personality development. The studies were based on findings obtained by means of various objective and projective methods and on case history material. Bowlby (4) subsequently summarized these, and related reports, in his book *Maternal Care and Mental Health*. His major thesis is that "what is believed to be essential for mental health is that the infant and young child should experience a warm, intimate, and continuous relationship with his mother . . ." Anything short of this "continuous" relationship in infancy and childhood is deemed to be a state of "maternal deprivation" which prevents the adequate later adjustment and future mental health of the individual reared under such conditions.

Institutions are not the only places which create the circumstances to which we alluded above. There are societies in which the typical family structure, known in our society, does not exist, and the "continuous" relationship with one maternal figure is not the rule. One example of such a society is the Israeli collective settlement known as the Kibbutz. A study of children reared in the Kibbutz would give us the opportunity of testing the theory concerning the continuity of mother-child relationship in infancy as an essential ingredient of mental health which is, so far, based solely on results with children reared in institutions. The life of a child in an institution is characterized by many circumstances, different from ordinary family conditions, in addition

to maternal deprivation. Perhaps, excessive emphasis has been placed on one of many factors operating in the situation.

One of Goldfarb's articles (7), referred to above, describes the children reared in institutions as "less mature, less controlled, less differentiated, more impoverished", etc. These conclusions were primarily based on Rorschach results with 15 children, aged 10-14, and a matched control group of children reared in foster homes during most of their lives. The present study attempts to make a similar comparison, between Kibbutz-reared children and controls, by means of the Rorschach technique.

KIBBUTZ REARING

The infant in the Kibbutz (pl. Kibbutzim), a few days after birth, is placed in the "infant house" where he lives in the company of his age-peers under the care of nurses with varying degrees of training and competence for their task. Typically the nurse, usually a mother herself, cares for three or four infants whose cribs are in one room. The biological mother feeds the infant during the day, plays with him occasionally during the feeding periods and after working hours, but leaves him in the infant house for the night. These intermittent contacts of the child with his mother and other members of his biological family continue through childhood and adolescence. The peer group forms the immediate social living unit of the child. It broadens and becomes larger as he grows older. But, it remains the child's primary group with whom he eats, plays, studies, works and sleeps. The educational atmosphere is usually permissive, democratic, stimulating

and non-restrictive. Thus, although there are some similarities between child-rearing in the Kibbutz and the institution, the differences are many and profound. The permissive friendly atmosphere and the presence of biological parents and siblings with whom close though intermittent contacts are established, are in marked contrast with the typical institutional predicament.

SAMPLES AND PROCEDURE

Thirty-eight children between the ages of 9 and 11 years (fourth grade) were randomly selected from a larger population to whom some preliminary group tests were also administered. These children represent six settlements where the testing has been done (see Table I).

The control group of 34 children within the same age range was obtained from five agricultural villages in which the ordinary family structure exists. Although economically these villages represent producers' and consumers' cooperatives, socially, and in terms of family organization they do not differ from similar communities as we know them in Western Society. The nuclear family exists in them and is the primary social unit.

All children were native born and were reared almost exclusively in the communities where they were exam-

ined. The Rorschach was the first of a battery of tests administered individually to each child. The present report will be devoted solely to the findings obtained with this technique. Subsequent reports will deal with the additional techniques and the results based upon them. All records were scored according to Beck's (1) system.

An attempt was made to avoid the "shotgun" approach in comparing the two groups. We were not concerned with a comparison on *all* possible Rorschach variables. The treatment of the data was focused on those Rorschach factors which are most closely related to intellectual and emotional maturational processes in children. Moreover, our interest was primarily in those factors that have been found relevant in studies of institutionalized children, alluded to above.

The statistics employed are entirely of a nonparametric nature, since such treatment avoids the assumptions of normality of distribution which is most likely unjustifiable with many Rorschach variables (5). In comparing the two samples, the *significance of the difference in the number of cases above and below the combined median* for the groups was determined by means of the chi square method (9). In other instances, the mere incidence of certain ratios in each sample served as a basis for comparison.

TABLE I. Age and Sex of the Groups

Groups	N	M	F	Mn Age (in mos)	S.D.	Villages
Experimental (Kibbutz)	38	27	11	122	4.45	6
Control	34	21	13	123	6.63	5

TABLE II. A Comparison on Intellectual Factors (No. above Mdn.)

	R		Approach			Content			Σ H Mdn.
	Mdn.	W% Mdn.	D% Mdn.	Dd% Mdn.	F+% Mdn.	P Mdn.	Categories Mdn.	A% Mdn.	
Kibbutz	22	16	18	25	24	21	23	20	19
Non- Kibbutz	29.5	17.5	75.5	5.0	70.5	4.5	8.0	54.5	4.7
Chi- square	14	20	18	11	12	15	13	16	17
P	2.02	2.14	0.50	8.00	5.57	0.87	3.57	0.23	0.00
	N.S.	N.S.	N.S.	<.01	.02-.01	N.S.	.10-.05	N.S.	N.S.

RESULTS

A. A summary of what might be termed the "intellective factors" reflected in the Rorschach records appears in Table II. Although the Kibbutz group tends to be somewhat more productive, there are no significant differences between the medians of number of responses for the two groups. Since Fiske and Baughman (6) found some significant relationship between the degree of incidence of many Rorschach variables and productivity in records, the lack of significant differences between the groups in this respect is a fortunate occurrence. Subsequent differences in the several variables, between the groups could, therefore, not be attributed to the productivity factor. (R).

The data concerning the three variables that constitute the "approach" produce one significant difference, i.e., in Dd percentage. The Kibbutz group tends to pay more attention to small details than does the control group. This findings by itself cannot be translated into terms of maturation. However, when the total approach proportions (W:D:Dd) are taken into account, the Kibbutz group comes closer to the expected percentages of adults and older children, based on the published normative studies (3, 10, 14).

A most striking difference appears with respect to the F plus factor. Twice as many children in the Kibbutz group achieved F plus percentages above the combined median than did the non-Kibbutz children. The perception of reality and the structuring of the world along its lines is more superior for the former group and is a good index of the maturational level. It certainly assumes even greater significance if Beck's (2) dictum that F plus represents "ego strength" is accepted.

The columns dealing with content, in Table II, do not reveal highly significant differences. There are no differences between the groups in the percentages of animal content (A%) or in the frequency of human responses (H+Hd). It is of interest, however, to point out that with respect to the number of content (interests) categories represented in the records, there is a difference between the groups that approaches significance ($p < .10 > .05$). Apparently, the Kibbutz children tend to have a broader range of content which is consonant with broader cultural perspectives and a high level of maturity.

B. Affectivity and its relative maturity are more meaningfully derived from ratios than from a survey of the incidence of individual variables. The incidence of the predominance of immature and egocentric affect (C+CF greater than FC) and of mature affect (FC dominant) as well as the absence of any color responses are compared in Table III for both groups. The chi-square obtained indicates that the difference between the groups approaches significance. Although somewhat less than one-half of the subjects in each group demonstrate the tendency to immaturity of affect (not altogether unexpected in 10-year olds), the relative incidence of children in the other two columns of the table show the main differences. The proportion of children in the Kibbutz group showing mature affect is considerably greater than that of the controls as is illustrated by the form-dominated color responses. Also, a smaller proportion of the Kibbutz group resorted to complete evasion or rejection of the color responses, a finding which cannot be placed indisputably along the maturity continuum.

TABLE III. Relationships between the Color Variables

	(C+CF) > FC	FC > (C+CF)	$\Sigma C=0$
Kibbutz	18	12	8
Non-Kibbutz	16	4	14
Chi-Square 5.31	P .10 — .05		

C. With respect to another cardinal Rorschach variable, namely the Human Movement response (M), no significant differences between the groups were obtained. The median for both groups is somewhat higher than two responses. The Experience Balance, or the ratio between affectivity (sum of color responses) and "inner living" (movement responses) does not reveal any significant difference between the two groups. A fourfold classification of this index, applied in a previous study (11), was employed and is reported in Table IV. The columns in the table report the incidence of the introversive, extroversive, ambiequal and constricted ratios respectively. Each group is represented in every category, indicating considerable variability in this respect within the groups, but no marked differences between them. The introversive and constricted types of Experience Balance tend to be predominant in both.

D. A global evaluation of the overall level of maturity of every child, based on the Rorschach scoring summary, was made by two judges experienced with children's Rorschachs, and by the author, independently. All summaries were coded and the judges were given all 72 of them in one shuffled pile with the instructions to place each record in one of the following three categories: (I) Immature for his age (II) adequate maturity as expected for a ten year old, (III) mature for his age. The judges were informed that these were records of children ranging in age from 9 to 11. No restrictions were placed on the number

of cases to be placed in any one category. Table V presents the results obtained from the three judges, after the classified records were placed in the two groups — the experimental (Kibbutz) and the control. The differences between the groups are statistically significant in the case of judge A and approach significance for judges B and C. The differences are fairly consistent, and in the same direction. Fewer Kibbutz children were placed in the "immature" category (I) and consistently larger numbers of these children were placed in category III (mature for age). The differences in the second category, as might be expected in such comparisons, are not striking. The consistency of the direction of the differences, between the groups, according to the judges in this type of global evaluation lends support to some of the trends based on individual variables and ratios, noted above.

DISCUSSION

The present study is limited to an analysis of a number of formal Rorschach factors that are considered to be related to maturity. The "total" records were not utilized. A detailed content analysis may yield additional information beyond that herein reported.

As far as these data are concerned, there does not seem to be any reason to believe that the type of inconstant or discontinuous mothering, represented by Kibbutz child-rearing practices, has any deleterious effects upon the subsequent personality development of the children involved. On

TABLE IV. Categories of the Experience Balance in Both Samples

	M Greater Than C	M Less Than C	M=C	Constricted
Kibbutz	18	5	6	9
Non-Kibbutz	12	2	9	11

TABLE V. Global Evaluation of Personality Maturity

	Judge A			Judge B			Judge C		
	I	II	III	I	II	III	I	II	III
Kibbutz	5	15	18	3	26	9	2	21	15
Non-Kibbutz	10	21	3	8	23	3	8	16	10
Chi-Square	.01 — .001			.10 — .05			.10 — .05		
P	13.51			5.31			4.75		

the contrary, the evidence based on the Rorschach technique, and on other findings reported elsewhere (12) points up a number of items on the credit side of the ledger. More Kibbutz children than controls show a more accurate perception of reality, more breadth of interest and cultural background, better emotional control and greater overall maturity. Moreover, there is no evidence to support the notion that has been advanced in one symposium (13) concerning Kibbutz child rearing, that the Kibbutz children may be more like each other, more of one mold, because of their semi-institutional life. Variations in content, type of affective control and experience balance would contradict the idea of some kind of uniformity in personality make-up.

Two principles of explanation in connection with our findings may be considered at this juncture of our discussion. 1. The "maternal deprivation" represented by the Kibbutz situation is basically and substantially different from that represented by the typical child-care institution referred to in Bowlby's review. Although the Kibbutz infant may suffer to some extent because of the inconstancy of mothering by the *same person*, as he gets older he is still able to establish a close and continuous personal relationship to his biological mother, though he may see her only after work and for limited periods of time. 2. The atmosphere and stimulation of the typical Kibbutz "children's house" is radically different from that found in the stereotyped institution. The atmosphere is permissive, education is progressive, teachers are usually devoted and idealistic. The general orientation of education for a collective society creates a favorable atmosphere for socialization and *esprit de corps* among the children of each unit. This subsequent experience in collective living apparently accounts, to a large extent, for the greater maturation of personality exemplified by our findings with the ten-year olds.

SUMMARY AND CONCLUSIONS

In order to test the effects of absence of "continuous mothering" in infancy upon later personality development in childhood, 38 Kibbutz-reared ten-year olds and 34 controls were compared by means of the Rorschach technique. Formal scores and ratios, and global evaluations of personality maturity made by three judges on the basis of the scoring summaries constituted the dimensions for comparison. Significant differences between the groups with respect to Dd and F plus percentages in a direction favoring greater maturity of the Kibbutz group, were obtained. Differences with respect to C, CF and FC relationships, number of content categories and overall personality maturity ratings approach significance. No differences in the incidence of P, H and A% as well as in the Experience Balance were obtained. The following conclusions may be drawn:

1. Kibbutz children do not reflect, in their formal Rorschach findings, any deleterious effects due to the alleged early maternal "deprivation."

2. There is some evidence that the Kibbutz children show greater personality maturity than do the controls.

3. These results do not support the notion of greater uniformity in the personalities of children reared together under the Kibbutz conditions.

4. Differences between the Kibbutz and the typical institution may account for the dissimilarity in personality development of children under the two sets of conditions.

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Rorschach Performance, Anxiety Level, and Stress¹

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The present investigation is designed to study the influence of psychological stress upon the Rorschach performance of high and low anxious Ss, as defined by the Taylor Manifest Anxiety Scale (17). This study is an outcome of a recently formulated view which describes the Rorschach protocol as the record of an interpersonal relationship that is sensitive to the characteristics of the examiner and the setting, as well as to those of the subject (14).

To date, empirical studies of the effect of experimental stress upon Rorschach performance have resulted in both positive (6) and negative (16) findings. These results may in part be due to the type of stress employed (6), or the difficulties in making the stress procedure realistic and meaningful (11). Another explanation, proposed by Cox and Sarason (4), is that one cannot readily study the effects of experimental stress in randomly selected Ss because individual differences in coping with stress may obscure the experimental results. To obviate these difficulties, the present investigation will use a form of stress which has been demonstrated as being realistic and meaningful (1, 3), and will partially control individual differences by employing a test-retest procedure with matched groups. For this experimental design, the following hypotheses were proposed:

1. Psychological stress will significantly change the number of responses obtained on 10 preselected Rorschach variables.

2. The Rorschach will differentiate Ss with high and low manifest anxiety on eight preselected Rorschach vari-

ables. In this analysis, *FC* and *CF* were excluded because of low test-retest reliability (9) and the absence of empirical data to support their inclusion in the investigation of anxiety level.

3. Eight Rorschach variables, excluding *FC* and *CF*, will significantly differentiate high and low anxious Ss after they have been exposed to psychological stress.

METHOD

Subjects

Two groups, each consisting of 12 Ss, were drawn from the upper and lower 20% of the *MAS* distribution. All Ss were female undergraduates at the University of Massachusetts. The 24 Ss were found to be under minimal environmental stress, as evaluated by an interview and questionnaire. This limitation on the choice of Ss was introduced to minimize stress not directly under experimental control.

Procedure

The Ss were individually tested twice within one to two weeks with the Behn and Rorschach tests in counterbalanced sequence. The use of the Behn as an alternate experimental series is based on studies by Eichler (5) and Schwartz and Kates (15). The Rorschach administration and inquiry followed the standard Klopfer procedure (10), with one exception. Following the test administration, the Ss were asked to repeat the blot series, giving additional responses to each card so that two responses per card were obtained for cards I through IX, and four responses for card X. The number requested was determined by a pilot study with eight Ss, using the same examiner and test administration. While additional responses were not discouraged, only the minimum

¹ The authors are indebted to Dr. Albert E. Goss for his helpful suggestions on the statistical treatment of the obtained data.

number required were scored so as to control R (7).

Prior to the second test administration, all experimental S s were given the same typewritten personality evaluation, supposedly based on the first inkblot administration, which advised that they were poorly adjusted (1, 3). The experimental group was selected by matching pairs of S s on their inkblot psychograms and MAS scores and then randomly assigning one S of each pair to the stress condition. An equal number of high and low anxious S s were assigned in this manner to the two treatment conditions. After the second test administration, the stress S s were given a complete explanation of the experimental procedure and supportive interviewing for a period of 10 to 90 minutes, depending on the amount of anxiety induced by the personality evaluation.

Throughout both test administrations, the examiner did not know the S s' manifest anxiety level. During the first test administration, the examiner did not know if the S s would be assigned to the control or stress conditions. To minimize possible differential treatment of the two groups, instructions were typewritten, and the examiner made minimal contact with the S s prior to the inquiry phase. Following the administrations, all protocols were scored "blind" by the same individual, following Klopfer's criteria (10). In scoring, one variable was scored at a time, responses within the same response category being compared to get maximal uniformity.

RESULTS

The means and standard deviations reported in Table I were compared by a three factorial (Type III) "mixed" analysis of variance design (12). All hypotheses were tested at the .05 level of significance. Departures from normality were not corrected on the basis of the Norton study (12). Heterogeneity of variance was "corrected" by setting a higher apparent level of confidence; i.e. the F table was entered at

the .025 level of confidence to evaluate a hypothesis at the .05 level (12). Where significant interactions were obtained, simple effects were evaluated by the Cochran-Cox approximate t test (12). For all cases where the obtained t was significant, the variances were homogeneous, as determined by a two-tailed F test. To account for possible "inflation of probabilities" because of the number of F or t tests being computed, the final results were evaluated by Wilkinson's tables (18) for the binomial expansion.

Matching procedure

The matching of control and experimental psychograms was evaluated by determining the main and simple effects of the experimental and control treatments. No significant differences were obtained for 11 comparisons.

Effect of psychological stress

Four variables— W , F , m , and ShF —changed significantly as a consequence of psychological stress, when compared to a matched control group. An alternate shading variable— $Sh\ wt.$ —was also significant. This alternate variable was included to make our results comparable to previous findings (6). However, it will not be considered a preselected variable, as it would be incorrect to consider the results of ShF and $Sh\ wt.$ as reflecting two independent findings. The occurrence of four significant differences from among 10 comparisons is significant at beyond the .05 level of confidence, as determined by Wilkinson's tables (18). The results of the analysis of variance are presented in Table II.

Manifest anxiety level

An analysis of the main effect of manifest anxiety level for four variables yielded one significant difference for RT . In addition, three trends at the .10 level of confidence were obtained for M , ShF , and Rej . As the experimental design does not take into account the use of two different inkblot series, a comparison of high

TABLE II—Analysis of Variance for 11 Rorschach Variables.

Variables	B†		AC†		ABC†	
	F	P	F	P	F	P
W.....	0.65		7.63	.025	0.97	
F.....	2.65		4.51	.050	1.74	
FC.....	0.00		1.97		1.37	
CF.....	0.59		0.97		0.62	
RT.....	7.92	.025	0.38		1.14	
M.....	3.90	.100	0.49		0.05	
m.....	0.16		5.11	.050	3.27	.100
FSh.....	0.09		0.12		4.18	.075
ShF.....	3.60	.100	13.24	.010*	1.47	
Sh wt.....	1.96		8.84	.010	0.24	
Rej.....	3.57	.100	0.01		4.37	.100*

*Corrected for heterogeneous variance.

†A — First and second test administration.

B — Manifest Anxiety level.

C — Experimental and control groups.

and low anxious Ss for the Behn and Rorschach separately was next made for these three trends. In this analysis, the Rorschach elicited significantly more *M* responses in low anxious than in high anxious Ss, the obtained *F* being 5.83 (*df* = 1, 20). A third analysis was then made of the simple effects of anxiety level for four variables where significant interactions were obtained. In this analysis, using the results of the first test administration, a significant Cochran-Cox *t* score of 2:13 was obtained for *F* (*df*=22). The final result of three significant differences from among 14 comparisons (eight predicted comparisons, plus six additional comparisons for the Behn and Rorschach separately), is significant at beyond the .05 level of confidence (18).

Manifest anxiety level and psychological stress

Trends at the .05 to .10 level of confidence occurred in three variables—*m*, *FSh*, *Rej*.—from among 11 comparisons. For these trends, more *m*, more *FSh*, and less *Rej*, were elicited in high anxious stress Ss than in low anxious stress Ss. No significant interaction of stress and manifest anxiety occurred.

A second analysis was then made, comparing the performance of high and low anxious control Ss on the first and second test administration. By

comparing the means in Table I, it was determined that high anxious control Ss were more similar to Ss under stress than low anxious control Ss in nine of 10 comparisons. As there is an equal probability of high or low anxious Ss being similar to Ss under stress for any one comparison, the probability of obtaining nine of 10 is .010.

DISCUSSION

Cox and Sarason (4) did not obtain significant differences between high and low anxious Ss exposed to experimental stress. However, the stress and non-stress groups did not significantly differ for the Rorschach variables being evaluated, so that their design collapsed to a comparison of two levels of manifest anxiety. In the present investigation, an independent evaluation of the effects of manifest anxiety and psychological stress is prerequisite to a discussion of the possible interaction of these variables.

The effect of stress

Significantly less *W*, more *F*, more *m*, and less *ShF* were elicited in Ss exposed to experimental stress. The results for *W* and *F* may be clinically interpreted as reflecting behavioral constriction in the stress group. A similar evaluation was made by Eichler in his study (6). Additional support of the hypothesis that stress elicits be-

havioral constriction may be inferred from investigations of conceptual functioning (1, 8). These studies report less abstraction and greater rigidity in the stress group, where the stress procedure is comparable to the one used in this study. The comparability of the stress procedure used is an important consideration because self-esteem stress elicits anxiety, according to most clinical discussions of the nature of anxiety (13). This may in part explain why so many studies which utilize physiological stress do not obtain comparable results (6, 16).

The *m* variable was included in the present investigation because of its interpretation by Klopfer as an indicator of stress (10). As expected, more *m* was obtained in the stress group. However, *ShF* is also considered to be an indicator of stress (6), yet less *ShF* (and less *Sh wt.* for comparison with other investigations) was elicited in *Ss* under stress. Previous studies by Berger (2) and Eichler (6) have obtained equally unexpected results with the *W* and *F* variables, respectively. The above authors, aware apparently that their findings were not consistent with clinical expectations, offered various explanations of this phenomena. A possible explanation of the supposed contradiction of clinical and experimental findings will be given below.

An overall evaluation of the occurrence of significant changes in the *W*, *F*, *m*, and *ShF* variables supports the hypothesis that the Rorschach is sensitive to situational influences such as experimental psychological stress. The obtained results suggest that the meaning of the test situation for the *S* should be evaluated, especially where the protocol indicates personality constriction or a reaction to stress.

Manifest anxiety level

High anxious *Ss* had significantly longer *RTs*, less *M*, and more *F*, than low anxious *Ss*. The findings for the *M* and *F* variables are especially significant, as they measure a number of

components which reflect the quantity and quality of one's personality resources (10). These results may be interpreted as indicating a degree of personality impoverishment in the high anxious group. A consideration of the *RT* variable also suggests that this impoverishment is expressed behaviorally in cautious interpersonal activity.

The finding of basic personality differences between levels of anxiety contrasts with the finding of constriction in the stress group. The nature of the changes obtained in *Ss* under stress indicates a more superficial or situational phenomena, in relation to the effects of chronic anxiety. This is consistent with theories of anxiety (13) which emphasize the role of chronic anxiety on personality formation.

Stress and manifest anxiety level

The above discussion has established that the stress and manifest anxiety variables, considered independently, result in significant behavioral differences, as evaluated by Rorschach performance. It is therefore meaningful to investigate the possible interactive effects of stress and anxiety level.

The obtained results demonstrate that psychological stress did not differentially affect high and low anxious *Ss* as predicted. However, control high anxious *Ss* consistently responded in the same manner as *Ss* under stress. This relationship could have been predicted by comparing data reported in the literature for high anxious *Ss* (4, 8) with results obtained in *Ss* under stress (2, 6). This sort of review would indicate general agreement that both high anxious and stress *Ss* tend to yield less *W*, more shading, less *P*, higher *RTs*, more *Rej.*, and more poor form responses. The only consistent

² This difference probably reflects the motivational properties of chronic anxiety, even though situationally induced anxiety may limit performance. This phenomena is frequently encountered in studies of anxiety with lower organisms.

difference found is for *R*, high anxious *Ss* yielding more *R* while *Ss* under stress yield less *R*.²

In the present investigation, a comparison of the trends for high and low anxious control *Ss* supports most predictions for *Ss* under stress. This includes more *F*, higher *RTs*, more *Rej.*, less *M*, less *FSH*, and more *ShF* in the high anxious control group. These very significant findings support Taylor's hypothesis that the *MAS* is a measure of anxiety readiness. While it is difficult to determine the exact nature of the stress experienced by the high anxious controls, one aspect appears to be the fortuitous discussion of projective techniques in class during the test-retest interval, as reported by a number of the *Ss*. The finding of such anxiety readiness raises the question as to why the planned stress procedure, which involved self-esteem threat and elicited many clearly observable behavioral indices of anxiety, did not yield greater changes on the Rorschach. This is especially so in the finding of less *ShF* in the stress group, whereas high anxious control *Ss* yielded more *ShF*. Apparently, the kind and amount of stress involved is a highly significant variable. Actually, the expectation that there would be a one to one relationship between the amount of stress employed and behavioral indices of stress now seems naive. Instead, the possible energizing, constricting, or disrupting consequences of anxiety seem to depend on the amount and kind of stress employed to induce anxiety. For these results, one conclusion seems clear. The same Rorschach variable may reflect different processes in the same *S* as a result of different situational influences. In the present study, this is demonstrated by the occurrence of more *ShF* in *Ss* under mild stress, whereas a matched group under more severe stress yield less *ShF*. These results thus greatly limit the interpretive significance of any individual Rorschach variable, unless the individual variable is in-

terpreted in relation to other response categories and/or in relation to the nature and meaning of the test situation. This conclusion may thus explain the previously discussed apparent contradiction between clinical expectations and actual empirical results with the Rorschach. The present authors suggest that clinical evaluations of the Rorschach do relate different response categories and do take cognizance of the quality of the testing situation.

SUMMARY

The present study was designed to investigate the effect of psychological stress upon the Rorschach performance of high and low anxious *Ss*, using a female college sophomore sample. In this design, the effect of individual differences was minimized by measuring the net test-retest change in the stress group relative to a matched control group. To make the obtained results comparable, the number of responses elicited was controlled. Anxiety level was defined by the Taylor Scale, while stress was induced by a threat to the *Ss*' self esteem. The conclusions follow:

1. The Rorschach is sensitive to situational influences such as self esteem stress.
2. Self esteem stress induces changes on the Rorschach which imply behavioral constriction.
3. The Rorschach is sensitive to differences between high and low anxious *Ss*, as defined by the *MAS*.
4. The responses elicited in the high anxious group imply a degree of personality impoverishment.
5. The direction of change for some scoring categories in *Ss* under stress depends upon the kind or amount of stress employed. This finding limits the interpretive significance of individual scoring categories without reference to the total protocol and the situational factors affecting the *S*.

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TAT Hostility and Psychopathology

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INTRODUCTION

A frequent question posed by psychiatrists in their psychological testing referrals is whether or not a particular patient constitutes a homicidal or suicidal risk. Possibly, a still more frequent question in such referrals deals with the presence or absence of psychosis. To answer these questions the psychologist usually utilizes, among other bases for judgment, the pervasiveness of hostility as revealed in projective test material. On the TAT it is ordinarily assumed that a patient giving stories surfeited with hostile material is much more likely to do physical damage to himself or to others than a patient whose protocol is relatively devoid of hostile material. Similarly, many psychologists assume, explicitly or implicitly, a one-to-one correspondence between the degree of expressed hostility in projective material and the severity of psychopathology. The rationale, if made explicit, would probably proceed like this: psychosis results from a breakdown of ego defenses. In view of the lack of repression in the psychotic, there will be a direct, uninhibited release of instinctual material, including hostility, when he is confronted with ambiguous stimuli which allow him free ideational expression.

The present study has two purposes. The first is to postdict possible differences in TAT hostility between hospitalized psychotic patients who entered the hospital with a history of a suicidal attempt or assaultive behavior and patients whose histories revealed no such evidence of acting-out. The second purpose was to elicit possible TAT differences in hostility between undifferentiated hospitalized psychotics and undifferentiated hospitalized neurotics.

PROCEDURE

1. *The TAT cards.* Six TAT cards were used. Several considerations dictated the choice of the cards. One was that obviously not all patients were given the same cards and a uniform series of cards had to be selected for all patients used in the study. Secondly, and of more importance, cards were selected on the basis of their ability to evoke hostile material. However, if all the cards were of this sort, less variability would result than if some of the cards were typically associated with unaggressive material. It was assumed that the inclusion of such cards would add to the discriminative power of the final series. The six cards finally selected were 3BM, 4, 6BM, 7BM, 12M and 13MF.

2. *The sample.* From among all male patients, past and present, in the Chillicothe, Ohio, V. A. Hospital who had taken the six TAT cards in the administration of their TAT, those with clinically diagnosed non-organic psychosis and fairly complete social histories were culled out. In each instance, the diagnosis utilized was the established psychiatric diagnosis. While the psychological report entered into this decision, it is certain that TAT hostility did not solely determine the outcome of that report and more than the psychological report entered into the establishment of the psychiatric diagnosis. There was no reason, then, to believe that prediction (or, in this instance, postdiction) and criterion were being confounded to any significant degree. This group of patients was further sub-divided into those whose histories revealed definite assaultive or suicidal tendencies and those without any strong evidence of inner- or outer-directed hostility in their overt be-

havior. Borderline instances were excluded from both groups. Patients who had made strong verbal threats against others were included in the hostile group if the history manifested some attempt to put these threats into execution, regardless of whether or not the threats were cut short by outside intervention. Twenty-nine cases were included in each group. All 58 carried a diagnosis of schizophrenia.

Neurosis in this study was arbitrarily defined as hospitalization for any reason except psychosis, organic brain damage or mental deficiency. A group of 58 from among all such patients who had taken the six TAT cards was randomly selected for the neurotic group. The actual diagnoses of these patients varied considerably, ranging from alcoholism to dependency reaction to acute anxiety state.

There were no significant differences in age or IQ between the two psychotic groups or between the total psychotic group and the neurotic group.

3. *Rationale, scoring and reliability of the TAT scale.* A five-point scale of hostility, ranging from no hostility to extreme hostility, was developed by the senior writer. Each TAT story was given a score in the following manner:

0. No hostility.
1. Forceful advice-giving, quarreling, feelings of anger or resentment, self-beratement, explicitly stated remorse or guilt. Does not include shame, disappointment or disgust.
2. Robbing or stealing, threatened murder or suicide.
3. Physical attack short of murder or rape. Attempted suicide.
4. Murder, rape, or suicide.

Although much less refined, this scale is similar in most essentials to the one proposed by Stone (6) and published after this study was completed. His scale, like ours, has a hierarchy of aggressive-hostile responses with verbal aggression weighted less than physical aggression and with both of these types of aggression weighted less than responses involving death. For re-

sponses involving either physical aggression or death, Stone makes no distinction, nor did we, between inner- and outer-directed aggression. In addition, his scale reduces the aggression score by half if the aggression is potential rather than carried out; similarly on our scale, murder would receive a score of 4 whereas threatened murder would receive a score of 2.

In selecting the psychotic acting-out group we made no distinction between the assaultive and suicidal patients, nor was such a separation utilized in the TAT ratings. Our justification for this procedure was based on a commonly accepted tenet of analytic theory. For example, Fenichel asserts that a study of depressive suicides validates the thesis "that nobody kills himself who had not intended to kill somebody else" (3, p. 400). In this view self-punishing tendencies are held to be a turning inward of sadism. In our group of 29 acting-out psychotics, 14 had manifested suicidal tendencies, but in only six of these 14 was there no history of assaultive behavior. Moreover, the TAT hostility scores of these six were almost identical with those of the 15 purely assaultive psychotics, and the same was true of the comparison between the 15 who had been purely assaultive and the 14 who had displayed either a combination of assaultive and suicidal behavior or suicidal behavior alone. For all of these reasons we felt justified in considering inner- and outer-directed hostility equally in both the acting-out psychotic group and the TAT ratings.

Our scale refers only to hostility manifested by the hero or central character. Press hostility was ignored. It should be stressed, too, that only expressed or overt hostility went into the hostility scale. Covert hostility which would necessitate clinical inference by the rater was excluded.

Each story received only one rating, the highest possible one. A patient's hostility rating was the sum of the ratings on the six stories. To assess the reliability of the ratings, 20

protocols or 120 stories were selected randomly from the total sample, and rated independently by another judge, a graduate student in clinical psychology. There was a total of 14 disagreements out of the 120 ratings. In 12 of these the discrepancy was only one (e.g., one judge rated a story as 3 and the other judge rated it as 4). The Pearson correlation-coefficient between the two sets of ratings was .94. In view of the high degree of agreement, the senior author's ratings were accepted as the basis for patients' TAT hostility ratings.

RESULTS

Since the distributions of hostility scores for all three groups (the two psychotic and the neurotic groups) were skewed, chi-square was used to test for the significance of differences. For each comparison the scores from both groups were pooled and dichotomized as close to the median as possible. Table I presents the comparison of the acting-out psychotic group and the non-acting-out psychotic group. Hostility scores of more than 3 were above the median.

The obtained chi-square of .62 is obviously not significant. Psychotics

TABLE I—Frequencies of Acting-Out and Non-Acting-Out Psychotics Below and Above Median of Hostility Scores.

	Below Median	Above Median	N
Acting-Out Group...	14	15	29
Non-Acting-Out Group.....	17	12	29
	31	27	58

Chi-square = .62, $p > .40$

TABLE II—Frequencies of Psychotics and Neurotics Below and Above Median of Hostility Scores.

	Below Median	Above Median	N
Psychotic Group.....	31	27	58
Neurotic Group.....	18	40	58
	49	67	116

Chi-square = 5.95, $p < .02$

with histories of suicidal or assaultive behavior did not produce TAT stories in which the central characters were overtly more hostile than psychotics who comprised the non-acting-out group.

The comparison between the psychotic and neurotic groups is given in Table II. A split at the score of 3 again gave the closest to a 50-50 division between the groups.

The obtained chi-square is significant at the .02 level with neurotics producing larger hostility scores.

One possible explanation of this result might be that neurotics, by and large, give longer stories than psychotics. People who are quite disturbed are conceivably less verbally productive, and a score on hostility (as well as any other variable that is being measured by the TAT) may very well be a function of productivity. To test for a possible difference in productivity 20 protocols, or a total of 120 TAT stories, were selected randomly from each of the psychotic and neurotic groups. Each patient's productivity was obtained by summing the total number of words used in his six TAT stories. The difference in the mean number of words per protocol between the two groups was not significant. Accordingly, the difference in hostility scores cannot be attributed to any difference in verbal productivity.

DISCUSSION

Our results are in general accord with those of Bialick (1), Gluck (4) and Lindzey and Tejessy (5). None of these studies found any significant relationship between TAT aggression and overt aggression. It seems clear that a prediction of suicidal or assaultive behavior for psychotic patients from TAT hostility is unwarranted. This is not to say that accurate predictions of this sort cannot be made from TAT protocols; however, such predictions would have to be grounded on a subtle evaluation of need-defense systems rather than a

simple correspondence between overt and TAT hostility.

The difference in TAT hostility between neurotics and psychotics is consistent with Wirt's finding (7) that neurotics display a greater ideational expression of hostile impulses than psychotics when hostility is measured by Finney's Palo Alto Aggressive Content Scale (2), a scale based on Rorschach content. Wirt interprets his result to mean that current theories may be in error when they assume a direct relationship between hostility and severity of illness. We would take the position that neither Wirt's study nor ours offers a definitive test of this assumption. Whatever hostile ideation exists in the patient may be tapped by the Rorschach or TAT, but often is not. Our explanation of Wirt's result (and ours) is based on the importance of situational factors and their effects on projective test results. The single common denominator among those hospitalized patients diagnosed as "schizophrenic" appears to be paranoid ideation. Paranoid patients are administered tests by a psychologist who is readily attributed with certain aspects of authority. It is reasonable to suppose that the suspiciousness of such a patient may be reflected by a reluctance to give verbal responses that will result in adverse evaluations of him. Consequently, a paranoid patient will often give very bland responses that are quite incommensurate with his affective state at that moment. Although individual variations will be frequent, psychotics as a group may be more defensive than neurotics in the interpersonal testing situation. Even in the interpretation of an MMPI profile (which is not the product of any examiner-tessee interaction), it is common to attribute very elevated scores to a neurotic plea for help rather than a psychotic disturbance.

Also relevant to the preceding explanation is the possibly unexpected Lindzey-Tejessy finding that TAT aggression indices correlated higher with

self-ratings than with the clinical ratings of competent observers. This study employed students rather than patients as subjects, but it does suggest that even patients may be more aware of what goes into their responses than is generally thought to be the case. Until a testing device which eliminates the effects of defensiveness in the testing situation can be perfected, it is questionable that the intensity and pervasiveness of anxiety-provoking affective states can be directly inferred from a face-value acceptance of verbal responses in a projective test.

SUMMARY

The present study made two comparisons. One involved a possible difference between acting-out psychotics and non-acting-out psychotics in TAT hostility, and the other comparison was between the total psychotic group and a neurotic group on the same variable. All subjects were hospitalized male patients. There were 58 patients in the neurotic group and 29 in each of the psychotic groups.

The results on six specially selected TAT cards indicate that psychotics with histories of suicidal or assaultive behavior do not reveal significantly greater TAT hostility than psychotics whose histories reveal no such behavior. A comparison between hospitalized psychotics and neurotics reveals significantly greater TAT hostility in the latter group. The problems posed by these findings in relation to current theory are discussed.

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A Rorschach Experiment with Six, Seven, and Eight Year Old Children

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In the last two decades, the Rorschach test has become recognized as a potentially valuable projective technique for clinicians to use in attempting to assay the personality assets and liabilities of children. Research has brought out, among other things, that the Rorschach is well responded to by young children, and that developmental trends related to the child's maturity level are to be found in their response patterns. Certain modifications in the administration of the test, originally geared to adult subjects, have been found useful by various workers in order to maintain better the young child's interest and attention. These administrative changes have appeared practically advantageous to individual researchers and subjectively justified. However, there is an obvious need to reduce a trial and error approach in child Rorschach testing through experimental study of the effects of certain procedures on test results.

One of the child-oriented administrative techniques, Ford's trial blot method (2), was examined experimentally in the present studies in order to determine its effect, if any, on the Rorschach patterns of six, seven, and eight-year-old children. This was done, recognizing that the introduction of a practice or trial blot may, in fact, significantly alter the young child's approach and/or responses to the ten standard Rorschach blots.

The recognized need for Rorschach data on the average and clinically normal child provided a secondary purpose, that of collecting as much data

on average six, seven, and eight-year olds as practicable. It was decided, therefore, that the children selected for study should, as far as possible, conform to the concept of clinical normality, i.e., be without overt personality disturbance and of middle-level intelligence. It was also deemed advisable to select children from middle-class homes and culture.

PROCEDURE

The subjects selected for the three age groups were all pupils in the primary grades of two parochial and two public schools in middle-class Chicago neighborhoods. In the three samples the children were all between six years one month and six years eleven months, seven years one month and seven years eleven months, and eight years one month and eight years eleven months respectively. The 72 children at each level were selected from a larger sample which was first screened for middle-level intelligence and freedom from overt personality disturbance. All the children were given Kuhlmann-Anderson group intelligence tests in small groups, and only those obtaining IQ's between 85 and 115 were retained. The children's teachers were given a checklist of behavior symptoms for each child, and no child receiving an excessive number of points on this checklist was accepted. (The number considered "excessive" was determined by placing the number of points each child received into a frequency distribution with those received by the rest of his classmates. Then a cut-off point or critical score, above which no child was admitted, was determined by an experienced clinician.) In addition, any child not passing certain "stop questions," which inquired as to

¹ This experiment was carried out as part of the requirements for the M.A. degree in the Department of Psychology, Loyola University.

whether or not the child's general behavior was found acceptable to ordinary school standards or whether the child was of serious concern to the teacher due to markedly aggressive or withdrawn behavior, was excluded.

After the above screening process was completed at each school, the children at each level were paired and matched for sex and, as closely as possible, in terms of CA and IQ. These matched groups were then randomly assigned to be segments of the control and experimental groups in the three respective age levels. To check any possible influence of age and intelligence factors, the differences between the mean IQ's for the control and experimental groups at each age level were tested for significance. P fell below .50 at all three age levels.

Administration procedures followed certain modifications recommended by previous workers. Simplified instructions were adopted from other studies (1, 2, 7), and the inquiry was conducted after each card. Procedure was identical with both groups except for the use of Ford's trial blot with the experimental group. The trial blot used was a photographed copy of Ford's blot (2, p.19), mounted to resemble the Rorschach plates.

ANALYSIS OF DATA

The data collected from the 216 Rorschach protocols of six, seven, and eight-year-old children in the studies were analyzed in terms of means and percentages in the various quantitative scoring categories outlined by Klopfer (4). Chi-square, with the Yates correction applied in all instances, was used to calculate the significance of the differences between the experimental (trial blot) group and the control (non-trial blot) group for each respective scoring category and ratio.

The results showed no statistically significant differences between the experimental and control groups in the major scoring categories at the six and seven year levels, but one signifi-

cant difference in the use of c was found at the eight year level. The experimental group used significantly less textural shading ($p < .01$). Moreover, at the seven year level a statistically significant difference was found in the M:Sum C ratio, with an introversion tendency noted in the experimental (trial blot) group. Also at this seven year level there was some evidence that the trial blot group was somewhat less outwardly responsive and used movement to a greater extent. At the six and eight year levels, no similar qualifying trends were noted.

Since only one significant difference occurred at the seven and eight year levels, it seemed reasonably doubtful that these single differences among so many non-significant chi-square values were truly meaningful, since chance factors could well have operated to produce them. For practical purposes, the original experimental hypothesis that the trial blot tends to influence the responses of six, seven, and eight-year-old children was disproved.

Since in terms of statistical analysis, the two groups of children receiving the differing administrations were not found to differ significantly with respect to quantifiable Rorschach scoring elements, and since both the control and experimental groups at the three age levels were originally selected under essentially normative criteria, the trial blot and non-trial blot groups were merged at each of the three respective age levels. Thus, three separate populations of 72 average six, seven, and eight-year-olds were obtained.

The findings in terms of their merged populations are placed side by side in Table I for purposes of comparison.

Number of Responses (R). The seven-year-old children had the highest mean number of responses (19.10). The eight-year-old group was somewhat less responsive (mean 17.28), and the six-year-olds averaged the

TABLE I. Means and Standard Deviations for Selected Rorschach Categories for 216 Six, Seven and Eight Year Olds

Category	Age 6 N=72		Ames N=50 Age Six		Age 7 N=72		Ames N=50 Age Seven		Age 8 N=72		Ames N=50 Age Eight	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
CA	6.6	2.89			7.6	2.82			8.5	2.42		
IQ	106.5	5.64			103.3	5.42			101.8	5.62		
R	15.54	8.40	15.78		19.10	9.15	18.32		17.28	7.82	15.86	
W	7.76	3.08	5.32		7.11	3.30	5.16		4.79	2.61	5.70	
W%	57.00	23.50	51.00		43.50	24.90	51.00		33.50	22.70	55.00	
D+d	6.56	6.15	5.74		9.65	7.70	7.94		9.95	6.05	6.64	
D+d%	33.00	20.90	34.00		46.00	21.60	41.00		54.50	21.00	37.00	
Dd	1.50	2.72	1.56		1.56	2.88	1.58		1.94	3.37	.62	
S	.40	.99	.48		.39	.64	.26		.32	.55	.32	
Dd, S%	10.00	12.60	15.00		10.50	11.90	8.00		12.00	12.80	7.00	
M	.22	.64	1.02		.36	.63	1.38		.46	.94	1.34	
FM	.97	1.20	1.62		.83	1.08	1.88		1.11	1.27	1.54	
m	.42	.87	.44		.49	.95	.82		.39	.70	.40	
K	.29	.64	a		.50	.83	d		.46	.70	f	
k	.01	.12			.00				.01	.10		
F	11.10	6.60			13.94	6.92			11.34	6.18		
F%	70.20	16.80	60.00		73.70	15.90	52.00		62.30	22.50	58.00	
c	.19	.46			.35	.67			.69	.91		
C'	1.12	1.68	b		.56	1.19	e		1.03	1.55	g	
FC	.71	.92	.40		.92	1.46	.74		1.01	1.18	.54	
CF	.74	.91	1.48		1.17	1.38	1.34		.53	1.09	.90	
C	.33	.68	.32		.11	.32	.76		.08	.33	.44	
ΣC	1.67	1.64	2.16		1.86	1.88	2.89		1.20	1.33	1.80	
A	7.34	4.08	7.50		8.06	4.28	7.60		9.05	4.60	7.28	
A%	48.80	21.50	48.00		44.80	20.80	42.00		53.70	19.30	45.00	
H	1.67	2.00	1.70		2.24	2.40	2.60		2.32	2.55	2.60	
H%	8.70	11.80	11.00		10.70	11.00	14.00		11.60	11.35	17.00	
P	2.24	1.11	3.60c		2.50	1.36	3.70c		2.72	1.29	3.70c	
P%	16.10	9.80	23.00		14.00	8.80	27.00		16.80	9.40	24.00	

a Ames reports a combined shading mean of .68.

b Ames reports a mean of .30 for her category "CLOB."

c Those given by one out of every six children for this age group.

d Ames reports a combined shading mean of 1.14.

e Ames reports a mean of .50 for her category "CLOB."

f Ames reports a combined shading mean of .92.

g Ames reports a mean of .24 for her category "CLOB."

least number of responses of the three age levels (15.54). This heightened responsiveness in the seven-year-olds over the six and eight year levels is in close agreement with the finding of Ames (1, p. 225). The progressive increase with age in the number of responses that might be expected is not borne out by this study nor that of Ames.

LOCATION CATEGORIES

The most apparent difference in these three age levels is in the manner of approach or choice of location areas. In the six-year-old, whole responses (W) predominate (57.00%);

at the seven year level, whole responses are found to give way to usual detail responses (D,d) though in mild degree (mean W% 43.50, D+d% 46.00); in the eight-year-old children, a marked emphasis on usual details is notable (D+d% 54.50) with a corresponding decrease in the wholes (W% 33.50). This upward trend in the use of usual detail responses with increasing age, a common finding, is perhaps a reflection of the young child's maturing powers of perceptual differentiation. Unusual detail and white space are used in moderation with a slight increase found at the eight year level.

DETERMINANTS

Form (F). The most frequently used determinant category in the present studies (as also in the studies of Ford (2), Ames (1), and Ledwith (5, 6) at these respective ages) is form. Pure form responses were most frequently used by the six and seven-year-olds (F% 70.20 and 73.70 respectively), with a marked decrease in these responses at the eight year level (F% 62.30).

Form accuracy level (F+%) in the present studies was based on a very lenient and subjectively child-centered scoring method in which only extreme and obvious poor form responses were scored F minus, in lieu of adequate objective scoring standards for form level at these ages. The resultant extremely high form accuracy levels appeared spurious and therefore were not included in Table I.

Movement. Human movement (M) was found to be relatively rare (less than one per record on the average) and showed a slight increase with age. Animal movement (FM) was used to a greater extent at all three levels, about one such response per record. Inanimate movement (m) was also used infrequently by the children, approximating human movement in frequency.

Color. Pure color responses (C) are rare (0.33 at the six year level, 0.11 at the seven year level, and .08 at the eight year level) and show a progressive decrease with age. Color-form responses (CF) are more common, particularly at the seven year level (mean CF 1.17). Form-color responses show an increase with age from 0.71 at the six year level to 1.01 with the eight-year-old children. It is interesting to note that the total use of color and movement is approximately equal within each of the three age levels.

Shading. Shading, textural (c) or three dimensional (K), was the least used category among the main determinants of movement, form, shading, and color, but increased gradually

with age. Three-dimensional shading was used to a slightly greater extent than textural shading by the six and seven-year olds. However, textural shading outweighed the three dimensional at the eight year level. Toned-down three-dimensional shading (k) was extremely rare, used by only one six-year-old and one eight-year-old, and by none of the seven-year-old children.

Achromatic Color. (C'). Achromatic color was used most frequently by the six-year-old children (mean 1.12) and least by the seven-year-olds (mean 0.56).

CONTENT CATEGORIES

Animal responses (A, Ad) showed a progressive increase with age in terms of mean frequency, but in terms of mean percentages for the total groups, the seven year level was lowest (44.80%) followed by the six year level (48.80%) with the eight-year-olds highest (53.70%). Human content (H, Hd) averaged 1.67 responses per record at the six year level, rising to 2.24 and 2.32 responses at the seven and eight year levels respectively. Between two and three Klopfer adult popular (P) responses occurred at the three age levels, with the highest average noted at the eight year level.

EXPERIENCE BALANCE

The results for the M:Sum C ratio indicate that at least half of the children at each level in the present studies fell into the extratensive category. Nearly seventy-one percent of the seven-year-olds demonstrated extratensive experience balance, while 61.1 percent of the six-year-olds and 55.6 percent of the eight-year-olds had this tendency. Less than three percent of the children, least among the six-year-olds, show an ambiequal ratio. Introversion patterns are found to increase with age, with almost six percent of the six-year-olds, nearly thirteen percent of the seven-year-olds, and slightly over fifteen percent of the eight-year-old children showing

introversial trends. Nearly one-third of the six-year-olds, slightly over one-fourth of the eight-year-olds, and about one-seventh of the seven-year-old children demonstrate no predominant direction, that is, coarctated ratios, since no color or movement responses were given by these children. In the case of the FMm:FccC' ratio, these results are contradicted somewhat. Here, considerably weaker extratensive trends are to be noted, along with correspondingly stronger introversial patterns. Also in this experience balance measure, more children at each age level show evenly balanced ratios. Again, a large and similar percentage of these children have coarctated records.

A comparison of the findings of the total results of the three present studies is made here with the recent studies of children's Rorschach responses done by Ames (1) and Ledwith (5, 6), despite the obvious differences to be found in the population of children studied by Ames. Ames' study, along with most previous investigations of child Rorschach responses, excluding Ledwith's, sampled children of superior intelligence and socio-economic background.

The studies vary only slightly at each age level in the number of responses averaged by their respective groups of children. At the six year level, approximately fifteen responses are given per child. The average number of responses for the seven and eight-year-olds were less consistent. The seven year total was highest in the present study, but the average at the eight year level fell between the totals reported in the compared studies.

Similar inconsistencies as noted in the number of responses are found in location categories of compared studies, wherein differences are found in the proportion of whole and detail responses at the three age levels.

All the studies show a high percentage of pure form responses, with the present study having the highest mean

percentage for all three age groups. The children of the present study gave fewer human movement responses than those of Ledwith and Ames, but showed an increase with age unlike the other two studies. In all the studies, animal movement is found to be higher than human movement.

Differences are found in the proportion of color-form and form-color responses at the respective age levels, with no consistent trends noteworthy.

Animal responses predominated in the content of the records, making up forty or fifty percent on the average. Human content in all the studies comprised one-fourth to one-third of the number of animal responses.

In all of the studies, shading responses were infrequently given by the children, with three-dimensional shading outweighing both textural and toned-down three-dimensional shading. Inanimate movement and achromatic color also seldom appeared in the records.

Though apparent developmental trends are noted in the comparison of the three age groups of the present study (human movement, detail responses, introversial experience balance increase with age; animal movement higher than human movement; color form higher than form color at six and seven year levels, with form color slightly higher at the eight year level), these trends are not borne out by the studies of Ames and Ledwith, except in the case of animal movement exceeding human movement in the three age levels. This might well be expected, as previously mentioned, when population differences are considered.

SUMMARY

The present study has attempted to evaluate a modified administrative procedure used in child Rorschach testing, Ford's trial blot method, which has been recommended as a means of nonverbal orientation to the test. Two groups of a total of 216 children at three age levels, six, seven,

and eight, were tested, one in which the trial blot was incorporated and one in which it was not used. A second purpose of the investigation involved use of the control group data to add to the already existing normative data on these age groups. Since there were no statistical differences between the two groups, they could be merged to provide a larger sample. To exclude deviants from the group, the children were screened for age, intelligence, socio-economic status, and behavior. Administration procedures followed certain modifications recommended by previous workers. Chi-square values were calculated for the major categories to test the differences between the two groups. The results showed no statistically significant differences between the two groups. It was concluded that, in terms of quantitative evaluation, a trial blot method such as this is an unnecessary procedure for this age

range. The groups were merged for comparison within the three age levels and with the results of other studies of children of this age.

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The Cartoon Situations Test: A Semi-Structured Technique for Assessing Aspects of Personality Pertinent to the Teaching Process

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In recent years, psychologists have become increasingly interested in studying the normally functioning individual and in understanding the complex interaction of personality and social role. One kind of research reflecting this trend has focussed on professional roles. In the professions themselves in the past two decades, there has been a heightened awareness of the psychological requirements of the professional role, leading to a redefinition of the role itself and to dissatisfaction with traditional methods for the selection, training and guidance of younger members. Both theoretical and practical interests converge, therefore, in current efforts to predict the performance of members of various professions, especially those involving relations between people, e.g., clinical psychologists, psychiatrists, social workers, teachers (8, 7, 2, 19). The newly defined professional role, emphasizing inter-person-

al relationships and psychological dimensions, makes complex demands on the person, and simultaneously, highlights the potential damage when individuals try to enact roles not geared to their psychological capabilities.

The attempt to predict performance in such complex roles has, however, met with varying success. Isolation of the personality correlates of adequate functioning must be based on an understanding of both the particular ways in which specialized knowledge and skills are transmitted through the medium of personality, and the inter-relations of personality with the requirements of the social role. Research in this area has been hampered by theoretical and methodological difficulties: problems of defining and assessing the relevant aspects of personality; the inadequacy of extant techniques for measuring significant personality factors with the required specificity; the problems inherent in analyzing the necessarily qualitative predictive data; the difficulty of obtaining adequate criterion data (10).

The present report describes an attempt to predict behavior in one area — the teaching of young children. The definition of the role of the teacher, especially the teacher of preschool and school age children, now highlights psychological as well as pedagogical processes; the teacher's qualities as a human being are now seen as critical determinants of her teaching effectiveness (3).

Studies attempting to predict teaching performance have utilized a number of techniques with somewhat disappointing and uneven success. The techniques have ranged from questionnaires and opinion inventories like the California test of authoritarianism (F-scale) and the Minnesota

¹ The development of this test has been supported by research grants from the National Institute of Mental Health (MH-215) during the period March, 1951 to March, 1956. We wish to express our appreciation for this support and for many important contributions to the study offered by our colleagues. Ethel Horn, Marjorie Janis, Claudia Lewis and Joan Swift worked on the statistical analysis of the test; Reuben Margolis has helped with the analysis of data; discussions with these colleagues have helped to clarify many underlying conceptual problems. Harriet Linton worked on preliminary analyses of data. Lawrence Epstein, Reuben Margolis, Virginia Stern and Marvin Zuckerman coded all the protocols used in this study and worked on the statistical analysis of the data. Members of the faculty of the Bank Street College of Education gave their time most generously to the task of rating teacher performance: Elizabeth Gilkeson, Eleanor Hogan, Wilhelmina Kraber, Claudia Lewis, Sheila Sadler, Virginia Schonborg, and Charlotte Winsor.

Teacher Attitude Inventory (e.g., 11, 4) to more open-ended although teaching-oriented techniques (e.g., 5, 9, 13); personality appraisal with the Rorschach has yielded contradictory findings (e.g., 18, 19); the use of a psychodiagnostic battery with a small sample of student teachers has led to interesting suggestive findings in a recent study (17).

The choice of predictive measures poses several problems for studies of this kind. Highly specific instruments such as questionnaires directly concerned with teaching are not comprehensive enough, since they attempt to predict concrete skills or specific opinions with little consideration of underlying personality factors. A fuller, more dynamically oriented picture is required, yet the nature of the task renders questionable the usual projective techniques for general personality diagnosis. Such methods serve to screen for pathology and to highlight inter-personal disturbance but seem less useful for predicting enactment of the teaching role: their strength lies more in tapping underlying need systems and modes of handling them rather than in specifying particular behavioral manifestations.

The technique described here, the *Cartoon Situations Test*, does not offer a total personality diagnosis, nor does it yield measures so specific as those obtainable with a questionnaire. Rather, the test attempts an assessment of broad personality dimensions, while focussing on those most pertinent to the criterion situation—teacher interaction with children. The nature of the test itself, and the approach to validation, is based on a conviction that the prediction of specific kinds of performance requires a clear definition of the particularities of the behavior situation toward which predictions are made, and an analysis of the aspects of personality relevant to functioning in such situations (cf. 16). As a first step, therefore, an attempt was made to define the job of teaching young children in terms of the

pertinent psychological requirements—the attitudes, the particular skills, the general modes of relating to other people, especially children.

This definition of the job led to a tentative statement of aspects of the person it would be important to tap; thus, the test itself, the framework for analyzing responses and the specific criterion measures used grew out of this job analysis.

Since 1950, the Cartoon Situations Test has been given to all candidates for the graduate teacher-training program of the Bank Street College of Education. Responses to the test have been analyzed and systematically compared with ratings of teaching performance at the end of the training year. These comparisons indicate that responses to the test are reliably related to important aspects of teaching. The present report briefly describes the test, summarizes the method of analysis and some of the findings to date prior to publication of the test itself with a manual for its coding and interpretation.

DESCRIPTION OF THE TEST

The Cartoon Situations Test (CST) consists of seven cartoons depicting teachers, children and parents in a variety of situations. Responses are written and involve general reactions to each cartoon.² The cartoons were selected from a larger array dealing with similar situations; a preliminary series of ten cartoons was administered to several groups of teachers and further selection was made using criteria of variety of theme, level of ambiguity of stimulus situation, productivity of response, etc. The seven cartoons which comprise the present series were chosen to tap such qualities as: the person's relation to authority; depth of feeling for child experience; tendency toward hostile, punitive responses; etc.

² We have not systematically administered the CST in individual face-to-face sessions, a procedure which would provide additional qualitative information.

The stimuli of this test portray situations comparable to those in which the criterion behavior occurs — adults, teachers and parents, in interaction with children. In this sense the stimuli, by providing a situation and a cast of characters, structure the response, “suggest” relevant content. On the other hand, the extent to which the stimuli are structured is deceptive; they are, first of all, cartoons. Cartoons have been used for a number of purposes, usually to study responses to humor (15); here the cartoon quality of the stimuli seems to serve a different function. The portrayal of a situation through the medium of a cartoon changes its impact; an extra dimension is added. The cartoon form adds ambiguity to an otherwise relatively structured situation as the fuzziness in a photograph can lend indirectness. Thus, a concrete situation is presented, but through a medium that reduces its reality meaning. The test, therefore, seems best described as a semi-structured technique: it is structured to elicit material relevant to a particular constellation of attitudes and impulses, but open enough, ambiguous enough, to permit the projection of affect.

INSTRUCTIONS

The instructions are as follows: “Most of us find these cartoons both funny and serious. Not everybody sees the same things in them. In fact, people even disagree as to the point of some of them. Tell us what you see in each one, and go on to develop some of the implications related to children, parents and teachers. Take as much time as you want with each picture . . .” In our use of the test, no time limit has been set; most subjects take about one hour.

Description of the Cartoons and Resume of Characteristic Responses

I. *Two young children playing:* one hands the other a doll saying, “It’s yours for keeps—until I want it.”

The response usually deals with the development of children’s logic

and language and/or the development of socialized behavior, such as cooperation and the sharing of possessions: the *giver* may be seen as exemplifying the young child’s manner of experiencing and expressing her needs, but is sometimes seen as selfish; the situation may be seen as requiring adult guidance toward socialized behavior or as best resolved by the children themselves.

II. *A principal’s office:* she is sitting at her desk; a teacher — hair awry and sleeve torn — carries in a screaming child; the teacher says, “Peter is a trifle over-stimulated, Miss Gaffney—may he visit with you until he calms down?”

The response usually deals with the causes and handling of the child’s uncontrolled outbursts, and the roles of the teacher and principal; the *child* may be seen as disturbed, angry or unruly; the *teacher* is usually considered inadequate and/or responsible for the dilemma but may be seen as understandably pressed by circumstances; the implications of bringing the child to the principal may be considered (in terms of the teacher’s relation to the principal, to the child himself or to the other children in the group); the *principal’s* role as authority figure is often discussed; she may be seen as either strict or benign; the dilemma and the teacher’s phraseology may be seen as a function of an underlying philosophy of education, which may be defended or criticized.

III. *Painting scene:* three children at easels, the teacher at the side; two of the children are completely covered with paint. The third says, “But I had to paint him green, Miss Johnson . . . I used all the purple on Sally.”

The response usually deals with the motivations, logic and language of the children and the teacher’s function in preventing and handling such misunderstandings; the *children’s* behavior may be seen as understandable or amusing in terms of their developmental level, or they may be seen as

creative and experimental, or as alibiing, deceitful, rationalizing; the *teacher* may be discussed from several points of view: in terms of her failure to prevent the crisis, or the manner in which she meets the situation, or in terms of her emotional reaction or her feeling for the children's motivations; the need to teach socially acceptable behavior may be noted, or punishment may be discussed; the effect of the painting on the children themselves or on the parents may be considered.

IV. *Family scene*: a mother looks at her young son who points to the baby elaborately tied to a chair with a ball of yarn; he says, "Honest, Mom, it was an accident."

The response usually deals with the feelings involved in sibling rivalry and with the mother's handling of this situation, but may sometimes treat the situation as a result of childish exploration and play; the *older child* may be seen as lying and evading possible punishment; the *mother's* role in preparing the older child for the baby and involving him in the baby's care may be discussed, or her function of protecting the baby, or punishing the child or setting limits to aggressive behavior may be considered.

V. "*Rhythms*": a teacher is playing the piano, a visitor at the door looks at the group of children smilingly dancing around waving handkerchiefs while one boy lies under the piano. The teacher says, "The children are little sailboats, but Gerald forgot his handkerchief — so he has to be a submarine."

The response usually deals with the teacher's handling of this play situation and the children's reactions to that handling, but may also focus on the children's experience in this kind of play; the *teacher* may be seen as imaginative and creative or as rigid and artificial; the *child* may be seen as included in the group and enjoying his position or as excluded from the group and punished; the *visitor* when mentioned, is usually seen as a mother

and described as bewildered or disapproving; the children's reaction to and benefit from group play may be discussed.

VI. *At the police station*: a little boy in tears says to the policeman, "I've come to give myself up—I threw the spitball at Miss Hogan." (see inset)

The response usually deals with the child's experiencing of guilt, with the genesis of this feeling and with distortions in the reasoning and logic of children; the *child's* guilt is usually seen as a result of the behavior of the teacher, or of the school or parents, but may also be discussed as a general experience of children; the *teacher's* relation to the children and role as authority figure is often discussed; the *police* may sometimes be discussed as authority figures, and general moral issues such as "good" and "bad" behavior and the relation between crime and punishment may be considered.

VII. "*Block-building*": the children are building a structure of blocks which almost encases the teacher; only her head sticks out as she gaily says to a visitor at the door, "For the first time this term they're really cooperating beautifully."

The response usually deals with the teacher's position, her relation to and understanding of the children and with their feelings towards her; the *teacher* may be seen as unable to cope with the class, as too permissive, as unaware of what children are like, or as unstimulating; the *children* may be seen as wicked and destructive, but are sometimes seen as justified in expressing hostility; the need for teaching cooperation may be stressed; the *visitor*, when mentioned, is usually seen as a mother who is described as bewildered or disapproving.

VALIDATION PROCEDURES

Method of Analysis of Responses to the Cartoons

Responses to the cartoons, like any projective material, can be analyzed in a number of ways. Protocols were

first analyzed in a purely qualitative manner based on general principles of projective interpretation adapted to a teaching context. Such an unstructured interpretive method, however, emphasized the individual factors in the protocol and seemed to maximize individual differences in interpretation. In order to provide a consistent framework for evaluation, a systematic coding guide was developed. In this way the analysis of responses has been focussed: aspects of the response to be considered relevant and salient have been systematized and defined. The dimensions, or variables, were evolved from intensive study of the protocols of subjects of known teaching performance. These coding variables represent teaching-related personality attributes deemed most relevant to the prediction of teacher functioning, and about which the CST seems to yield adequate information.³

In the validation study reported below, the conceptual framework for evaluating responses was provided by the following dimensions. They are presented with a summary statement of the aspects coded under each.⁴

1. *Quality of Expressive Tone*
(coded for the degree of con-

trolled or spontaneous affective tone)

2. *Orientation to Dilemma*
(coded for the tendency to minimize, maximize or appraise realistically the cartoon dilemma)
3. *Quality of Emotional Identification with Characters*
(coded for the tendency to identify with children or adults in the cartoon, and for the qualities and closeness of such identifications)
4. *Perception of Authority Role*
(coded for the general perception of the authority role and for the degree of control, balance or permissiveness in that perception)
5. *Complexity and Quality of Psychological Thinking*
(coded for the presence of motivational, developmental, associative, or rationalistic concepts, and for the depth and soundness of psychological principles)
6. *Orientation to Action*
(coded for the tendency to take action, and for the nature and bases of action recommended)
7. *Modes of Aggressive Expression*
(coded for the nature, bases and direction of criticism or blame, and for the presence and quality of punishment themes)
8. *Attitudes toward the Socialization Process*
(coded for the relative stress on the fulfillment of individual or group needs and the manner in which this conflict is seen, and for the qualities of guidance or pressure in approaches to the socialization of the child)

Subjects

The validation study sample is composed of two separate classes of 31 and 34 students, respectively. There are, therefore, 65 subjects (Ss) of whom four are male. The Ss range in age from 21-39; the median age is 24. (Al-

³ In developing a manual for coding responses, the work of Murray (12), Aron (1), Holt and Luborsky (7), Eron (6), Pittluck (14), and others served as rich sources for ways of organizing the material and for leads as to significant dimensions.

⁴ The system of analysis used in the validation studies reported here has since been revised. The basic dimensions remain essentially the same, but the coding system has been considerably modified: elements of dimensions have been omitted or reformulated; definitions have been clarified.

It should be noted that four dimensions coded in the first study are not presented here, since they have been omitted from the revised system on the basis of coding difficulties, paucity of findings, or both. These dimensions are: genuineness of response; creativity; response to children's negative behavior; complexity of field.

The revised system of analysis, with elaborated definitions and illustrative examples for each coding cue, will be presented in a test manual now being prepared for publication.

though no formal study has been made of the socio-economic level of these Ss, they tend to be middle and upper-middle class.)

Coding Procedure

The study reported here comprises a first systematic attempt to validate the CST. The method involves a rather severe test of the usefulness of the instrument: the protocols were rated blindly and in piecemeal fashion in an attempt to test relations between specific coding dimensions and aspects of performance.

Protocols are coded for the incidence of relatively specific criteria which serve as *cues* to the major variables. While the cue definitions may carry implicit positive or negative connotations, the coding itself does not involve judgments of the desirability of a particular score.

The procedure followed the method of blind analysis. In addition to coding for sheer incidence, scores are annotated in terms of intensity, direction, ways in which the content is modified, and for main vs. additional scores. In this study four coders were paired (at random); the coding dimensions were divided into two groups. Thus, each pair coded the 65 CST responses on half of the dimensions.

Inter-Coder Reliability

Two measures of agreement between the coders were used: the *percentage* of scores similarly coded, and the *correlation* between the two coders' scores.

In calculating the percentage of agreement between coders, the kinds of differences as well as the sheer number of discrepancies have been considered. As Aron (1), working with TAT material, has pointed out, such discrepancies cannot merely be added, but must be weighted on the basis of their actual meaning. A scale of agreement was defined, and the two coders' sets of scores were categorized in these terms. The scores were compared per S, per cartoon. The mean

per cent of *agreement* is 66.9. Thus, approximately two-thirds of the scores differed not at all or in only minor ways: in designation of intensity or as to whether main or additional. For these scores the coders were in essential agreement: the differences would not affect an individual's standing on any dimension. Twenty-five per cent of the scores were categorized as *no agreement*, indicating those instances where coders differed about important aspects of the response, where dissimilar or even opposing statements might be made.

The second measure of coding reliability is based on the scores used in testing the relationships between CST and evaluation data. Agreement between coders was tested by means of the Pearson product-moment correlation. (In some cases, however, the product-moment formula was inapplicable and the presence of a relationship was calculated by chi-square; a few scores were given so infrequently that no measure of reliability could be applied.) The inter-coder *r*'s range from .31 to .86 with a median *r* of .57. When the coders' scores are pooled, estimates of reliability, based on the Spearman-Brown correction, range from .47 to .92, with a median *r* of .73. Some of these coefficients are too low for adequate prediction, but most are sufficiently high to warrant their use in testing relationships.

Current work on the CST will provide the data for a reassessment of coding reliability and it is expected that the revised system should yield a higher level of agreement; a number of coding discriminations have been eliminated and the definitions have been clarified.

Evaluation of Performance

A rating scheme for evaluating (student) teaching performance was developed to provide differentiated measures of aspects of functioning. Ratings made by the guidance staff of the college are the primary material for evaluations of the student teachers. These ratings are based on extens-

ive knowledge of the subjects; the student advisors observe and supervise students in their practice teaching, they meet with them informally and in small groups, and they hold individual conferences for personal and professional guidance. Judgments of others who have contact with students (course instructors and classroom placement teachers) serve to supplement the advisors' evaluations, although the advisors' ratings were given greater weight.

The criteria for evaluating teacher-candidates at the end of the student year are focussed on those aspects of performance deemed crucial to the teaching role, yet limited by the areas into which it was expected that the CST might be able to predict. The Evaluation Guide, therefore, represents a practical compromise between what one would ideally like to know about a student's performance and what staff contacts make it possible to know.

Evaluation Guide

The schedule is composed of 15 questions requiring ratings of: the ease with which the student makes and maintains contact with children; the nature of the relationships she establishes; her reaction to children's negative resistive behavior; her conceptualization of the balance between permissiveness and control; the way in which she handles the control role in actual practice; her conceptualization of child behavior, the extent to which she thinks in terms of the motivational significance of behavior and developmental levels; the quality of her relations with adults; the effect of personal problems on her relations with children, with adults, and on her academic work; the core of her interest in teaching, her motivation for becoming a teacher; the level of her general intellectual functioning; the creativity and originality of her thinking and work.

Several additional questions represent an over-all judgment rather than

the evaluation of a particular attribute or ability: the nature of her conceptualization and enactment of the teacher's role; her readiness for teaching responsibility at the time of evaluation, i.e., the end of the training year; and an estimate of her teaching potentiality after more experience and personal development.

Each group of students was evaluated at the end of the training year. After the individual ratings were completed, the raters met and discussed their ratings, coming to consensus on a single rating for each S on each item. The evaluations were then re-viewed in terms of the group distributions.

Since the evaluation procedure required an agreed-upon rating, there is no measure of the reliability of the judgments; rather reliability is achieved through a process of forced consensus.⁵

FINDINGS AND IMPLICATIONS

A number of statistically reliable relationships obtain between specific modes of responding to the CST and evaluations of behavior; these findings are, of course, subject to verification through cross-validation procedures and this report, therefore, summarizes the main trend of the results.⁶

⁵ Although the Evaluation Guide was intended to provide discrete measures of different aspects of functioning, the performance measures are highly inter-correlated. This poses problems for obtaining adequate criterion measures as well as for making specific predictions from responses to the CST. The clustering of criterion measures might seem to argue for a general, all-inclusive criterion. The fact that many specific aspects of performance may actually be correlated does not, however, mean that they are identical; moreover, the rating of performance tends to be easier and more adequate when conceptually discrete qualities are separated. In addition, predictive scores are related to some but not all of the criterion measures—the correlation between performance measures is not so great that a score significantly related to one performance item is necessarily related to its correlates.

⁶ The study reported here is currently being replicated using different samples of Ss.

In testing scores against evaluation measures, the two coders' ratings were pooled, except for scores on variable II (orientation to dilemma). Here the two coders seemed to have differing interpretations of the dimension; consequently, each set of scores was evaluated separately against the criteria (see discussion of findings).

For the other variables, scores assigned by both coders were plotted and cut-off points determined by the distribution of scores. The group was dichotomized or trichotomized depending on the frequency and distribution of both CST scores and evaluation categories. Relationships between CST scores and performance evaluations were determined by means of the chi-square technique.

The eight dimensions on which responses are coded vary in their effectiveness in predicting behavior. Taken together, the array of specific measures seems to be related to teaching behavior in a meaningful and coherent way. The usefulness of a dimension, of course, is a function not only of the number of reliable relationships it generates, but also of the salience and psychological meaning of the relationships.

In interpreting the findings it is important to keep in mind the specific conditions of measurement. The *Ss* took the CST as part of their application for professional training; we assume that they were test-oriented and success-oriented, that the test-quality of the situation modulates responses. Even the process of putting one's reactions into writing imposes a certain amount of censorship and of modification. In fact, one might think that these factors would operate to yield bland, affectless, responses; the response to the test, however, is not so intellectualized. Nor, it might be added, are the *Ss* so knowledgeable and withholding — they do express

attitudes, conflicts, and feelings of a highly personal nature.

Findings

This section presents the major relationships obtained between the CST dimensions and the evaluation measures.

The quality of the *expressive tone* in the cartoon responses is related to three important performance measures: those whose responses express more affect are rated as "more lively" teachers — more likely to stimulate exploration and experimentation rather than to require conformity to adult standards ($p=.04$); more likely to have ideological reasons for having chosen teaching as a profession ($p=.09$); most likely to develop into gifted teachers ($p=.08$). This qualitative measure, which transcends specific content and concerns the spontaneity of expression, seems to offer a clue for the prediction of a relatively dynamic and independent enactment of the teaching role.

The nature of the affect projected into the cartoon situation is of crucial importance. The extent to which the *Ss* identifies with characters depicted in the cartoons, however, does not provide a simple estimate of the ability to empathize, to relate sympathetically with people in behavior. On the contrary, identifying with children on the CST is associated with having difficulty making contact with children ($p=.10$) and with over-identification in relations with them ($p=.05$); these *Ss* are rated as least prepared to teach ($p=.02$); and their general future development is viewed as uncertain ($p=.09$). The meaning of "identification" in this situation requires clarification. (Perhaps it should first be noted that the term is used here not in the psychoanalytic sense of identification, but in the more everyday sense of sympathetic taking of a character's point of view, empathy, etc.) The findings indicate that what appears, manifestly, to be a warm, sympathetic response to a

Analyses of the data are in process and should serve to clarify the significance of these findings.

character may, when considered in the context of the testing situation, be an over-reaction; it is more appropriate to hold a certain psychological distance between the self and the cartoon characters. Non-identification in the testing situation, rather than implying distance or a coldly intellectualized approach, is related to an appropriately warm responsiveness in the behavioral situation.⁷

The most fruitful measure of the CST dimension *aggressive expression* is "absence of expression of hostility." (This score, more exactly, indicates the presence of relatively few or no responses involving blame, criticism of characters, or recommendation of punitive action.) Those Ss who tend to express less hostility on the CST receive "superior" ratings on five different evaluation measures: they are able to establish emphatic relations with children ($p=.03$); to conceptualize and to enact the control role in a balanced realistic way ($p=.02$, $p=.025$); they have an understanding of children's behavior in terms of motivational and developmental processes ($p=.08$); they are considered ready for teaching ($p=.08$). This score is clearly useful, yet here again the correlation between expression in a testing situation and in behavior is not simply one to one. For the relationships should not be taken as a simple indication of the prognostic value of low expression of hostility. It is a truism that hostile feelings and impulses are a necessary and inevitable aspect of personality, that excessive bottling-up of such impulses is neither healthy nor desirable. Especially in the area of aggression, however, a good deal of modulation of impulse is to be expected from normal subjects

in a test situation. The dimension was coded in terms of the modification of expression; the nature of the situation seems to skew the scale toward covertness of expression.

The measure of *orientation to dilemma* is designed to tap an individual's tendency to maximize, to exaggerate conflicts and problems vs. the tendency to minimize or ignore problem aspects. As noted above, this dimension was interpreted so differently by the two coders that each set of scores was tested separately against the criterion measures.⁸ In spite of the apparent ambiguities in definition, the dimension seems fruitful.

The degree of objectivity in the assessment of the seriousness of the conflict depicted yields several significant relationships. Whether the deviation from objectivity is in the direction of over-accentuating or of minimizing the seriousness of the situation does not seem to be crucial. Those who minimize or over-accentuate, that is, those less able realistically to assess the dilemma, tend to be least ready to teach, with future development uncertain ($p=.10$, $p=.04$); they tend to have "low" ratings on a general evaluation of conceptualization and enactment of the teaching role ($p=.06$). Minimization of the depicted dilemma is also associated with an inability to form empathic relationships with children ($p=.02$.)

The *complexity and quality of psychological thinking*, the most intellectual of the scoring dimensions,

⁷ This dimension has been reorganized to provide a four-point scale from close emotional identification with child or adult to no identification. The revised formulation allows for the separate coding of qualitative aspects of identification previously undifferentiated; the justification for these distinctions depends, of course, on further empirical findings.

⁸ Although the coders differed, no one set of scores seems empirically more or less useful. The nature of the difference seems to be related to the difference in the coders' backgrounds: Coder A is a clinical psychologist, Coder B is a former nursery school teacher; whereas one evaluated the situation from a more clinical viewpoint, the other was more teaching-oriented. These differences, however, were internally consistent and led to a shifting of scale values which produced absolute differences in scoring while consistently maintaining internal relations. In an attempt to produce equivalent frames of reference, the definitions have been revised.

is, as would be expected, related to adequacy of intellectual functioning ($p=.04$). Specifically, non-motivational conceptualization on the CST is related to a comparable manner of thinking about child behavior at the end of training ($p=.06$); also, using vague and limited concepts to explain behavior on the CST is related to a limited enactment of the teaching role ($p=.04$).

Although the responses clearly reflect psychological knowledge and level of sophistication, they also reveal the quality of the Ss' thinking about interpersonal relations. Sheer information is important but more significant is the extent to which a person is motivated to understand behavior, and the way this understanding is brought to bear on a specific situation.

The dimension concerned with *attitudes toward the socializing process*, designed to tap an important area of conceptualization and ways of handling children in groups, yielded few positive findings. One of the sub-scores — socialization pressure — although not significantly related to any criterion measure when taken alone, becomes an effective predictor of inadequate performance when this score is combined with the tendency to explain behavior in mechanical non-motivational ways.

In two cases, dimensions that did not relate to criterion measures have, nevertheless, been retained in the present coding system because of their central importance in the teaching process. One, *orientation to action*, attempts to tap the individual's potential for taking action in a situation rather than withdrawal or contemplation of on-going activity; this is indeed a salient quality for a teacher and one which it is particularly difficult to infer from written material. The other dimension concerns the Ss' *perception of the authority role*; clearly, the way the individual conceptualizes and enacts the authority role is a crucial aspect of her function-

ing as a teacher. The cartoons elicit relevant material that can be coded rather reliably; only one statistically significant relationship was obtained, however, and its meaning is not clear. It is never possible to account for the absence of findings. Even when these are due to the inadequacy of the methods used, the sources of error may be multiple. It seems likely, however, that the study sample does not afford a wide enough range of variation to provide a fair test. The effects of this restriction, not in sample size, but in the nature of the population tested, is, of course, not limited to any one variable; however it may be particularly relevant to the authority dimension since most teacher-candidates who choose the Bank Street College do so because they have a concept of the College as a place where, in a sense, they can learn how to be "benign authority figures." They may and do have more or less difficulty enacting the role, but they hold it as a positive value.

Indices

A summary score, predictive of general functioning was developed by using a simple checklist approach. Five scores, each independently related to important criterion measures, were combined to yield a composite *Positive Index*. The separate scores are: tendency toward affective expression, ability to assess realistically the seriousness of the depicted conflict; tendency not to identify with characters, especially children; infrequent use of original, unique themes rather than popular, more usual ones. This composite score was tested against two summary criterion measures — teaching readiness and teaching potential. With this Positive Index it is possible to separate those Ss rated as ready for teaching responsibility at the end of the training year ($p=.01$). The score, however, does not distinguish Ss rated as having high teaching potential. It was thought that stressing more positive aspects

of the responses might facilitate the prediction of teaching potential, but the concept is quite difficult to define empirically. Among these raters there is a community of opinion as to the behavioral constituents of teaching readiness, but considerable diversity as to the more intangible components of teaching potential.⁹

Interpretative Analysis of Protocols

The coding method described above is suited to the analysis of group data for certain research purposes. In the attempt to test the predictive value of the CST, for example, it has been important to separate the different components of responses in an effort to determine the behavioral correlates of specific dimensions. For the interpretation of an individual's protocol, however, another level of integration is required; it is necessary to "put the pieces back together again."

Some psychologists using similar techniques have felt that there is no need to take projective material apart and have argued for study of the whole protocol allowing the free play of clinical intuition. Experience with projective data from the CST and other techniques has often shown, however, that when the process of analysis is not structured around salient and specified dimensions, interpretations tend to be highly idiosyncratic and unreliable and to shift the focus of inquiry depending on the content presented. For these reasons, a method for analyzing CST responses has been developed; this method is based on the coding dimensions which provide a framework for analysis of the protocol whether or not the actual procedure of coding itself is undertaken.

The material can be organized

around four major topics: the teacher's conceptual background; the (probable) quality of her relationships with children and with adults; the concept and (probable) enactment of the authority role; and personal qualities of the responses. In each of these categories, certain of the coding dimensions provide relevant information. For example, in attempting to characterize a person's conceptual background from CST data, one would consider the range and level of concepts employed to interpret behavior; the general orientation to the psychological conflicts implicit in the cartoon dilemma; the tendency to make moralistic judgments; the degree of concern for channeling impulses into socially approved modes and the extent to which this concern is balanced with interest in supporting and developing individual potential. In assessing the quality of relations with children and adults, one would note especially the tendency to identify with children and/or with adults, whether certain kinds of children, or adults, seem to elicit a more or less sympathetic response; the tendency to express affect, and what kind of content seems to call forth affective reactions; the extent to which hostility is expressed, against what kinds of figures it is directed, and in what circumstances it seems to be called forth. In a similar way, certain coding dimensions can be selected and organized to characterize the person's perception of the authority role and the personal, idiosyncratic qualities of the response, as well as other comparable areas that may be of special interest or relevance.

Unique perceptions of the stimuli, the tendency to structure different situations around major repetitive themes, expressive verbal mannerisms, items of personal history, significant shifts in tone, cynical facade mechanisms — all may be evidenced in response to these cartoons, as to other stimuli of a projective nature. The analysis of CST protocols, utilizing

⁹ A comparable *Negative Index* was also tested against the summary ratings. Again, however, a reliable relationship obtains between the composite score and the rating of teaching readiness ($p=.01$), and no relationship is found with the measure of teaching potential.

general principles of projective interpretation within the framework outlined here, has proven extremely valuable in the guidance and counselling of students in the Bank Street program.

DISCUSSION

The main approach in this study has been to test out the possibility that systematic analysis of responses to this semi-structured test would yield differential predictions of teaching performance. The findings indicate that the test is indeed a useful predictive instrument. A number of expected relationships, however, did not appear, and some dimensions, clearly central to the teaching process, did not prove fruitful. While it is always possible that such failures in prediction are due to the nature of the test itself, certain additional factors are undoubtedly contributory.

The way in which the study was conducted, for instance, imposed a severe test of the usefulness of the CST. The protocols alone—without qualifying information from interviews or background material—provided the predictive data. The use of coding procedures designed to minimize halo effects and to maximize the extent to which each dimension was considered independently eliminated valuable aspects of the data—the interrelations among discrete scores and the “whole” qualities of individual protocols.

In addition, in this study the effect of training is an exceedingly important and unevaluated variable. The attempt to measure the predictive validity of the test poses special problems in this situation for it is not merely ten months of time that intervene between administration of the CST and the collection of criterion data, but a year of change in the very areas in which prediction is being attempted. The characteristics measured by the CST condition the student's response to the program; the training experience in turn influences these

attitudes and their potential for enactment. Evaluation of the performance of individuals in an active growth process provides complex criteria for validating a projective test.

In addition, the relative homogeneity of the population used in this study has complicated the research task. These subjects are not representative of the larger sample of candidates for teacher training or of teachers. They are, first of all, liberal arts graduates; they are partially preselected in that they come to the Bank Street College expecting a particular educational philosophy; the selection involved in the admissions procedures further reduces the variability of the group. This restriction applies both to the range of response to the CST and to the range of difference in performance, and consequently reduces the likelihood of obtaining significant differences between test responses and performance ratings.

Additional studies of the CST are currently in progress. As has been noted above, the study is being replicated with different groups of Ss. The CST has also been included in a battery designed to provide multiple measures of teacher personality; this battery has been given to approximately 200 prospective teachers trained at several different teachers' colleges. The observation and ratings of the classroom behavior of approximately 50 of these Ss will provide additional criterion data for the study of the predictive usefulness of the CST.

Study of the cartoons' stimulus value has been undertaken in order to ascertain the relative extent to which each of the cartoons elicits specific content and to test the consistency of such stimulus values in different populations. Such information, it is felt, will provide a useful frame of reference for the analysis of individual protocols, as well as for the evaluation of group data.

The populations used have thus far been limited to teachers of young

children. The test itself, however, seems to have broader relevance. The potential usefulness of the Cartoon Situations Test seems to lie in three directions: 1) as a tool for the assessment of attitudes concerning children and modes of relating to children — attitudes significant not only for teachers but for others who work with children; 2) as an aid in facilitating guidance or counselling during or after professional training; and 3) as an effective research instrument specifically directed to research on psychological factors in the educational process.

SUMMARY

The present paper describes the Cartoon Situations Test, a semi-structured technique designed to assess personality dimensions relevant to interaction with young children. The test consists of seven cartoons depicting teachers, children and parents in a variety of situations. In a first attempt to validate the CST, the test was given to 65 student teachers at the time of admission to graduate teacher training, and analysis of these Ss' responses to the cartoons was systematically compared with evaluations of their subsequent (student) teaching performance. The findings indicate that responses to the test are reliably related to important aspects of teaching. A schema for analysis of responses to the CST is summarized, and a resume of the findings is presented.

Further research is in progress. It is hoped that the CST may prove useful as a research instrument, as an aid in professional counselling, and as a tool for assessing attitudes concerning children and modes of relating to children.

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The Generality of Scope and Differentiation Responses to the Rorschach¹

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Perception is now thought of as one aspect of a unitary behavior system so that one's major modes of perceiving reflect one's major modes of behavior in general. Rorschach theorists have been among the major proponents of this point of view. In this study the concepts of scope and differentiation are examined to see whether they involve generalized behavior traits that operate in the areas of perception, cognition, and socio-emotional behavior. Scope is defined as the extent of the objective situation covered by clear awareness in the perceptual field. Differentiation is thought of as the complexity of that area of clear awareness. These two dimensions are measured on the Rorschach by the location and form level scoring systems. Klopfer and Kelley (2), Bruner (1), and Werner (10) have all argued for a common manner of approach to perceptual and cognitive tasks. Rorschach theorists (2), (5) have made claims for a unity of approach that extends even into the social and emotional areas of functioning.

Little research has been done directly with the validity of the scope and differentiation measures of the Rorschach, but what has been done tends to confirm the generally accepted interpretation of the responses. Typical Rorschach differences for the various mental illnesses have been found (6). In the vocational area it has been shown that people successful in different specific occupations have characteristic modes of perceptual ap-

proach to the Rorschach (3). Developmental studies have shown trends for scope and differentiation responses to change with increasing age (4).

Since, on the other hand, a number of experimental studies (9) have tended to indicate the specificity of perceptual behavior it was felt that there was good reason to make a direct test of these Rorschach claims. The following hypotheses were formulated for testing in this experiment:

1. Scope and differentiation variables are relatively independent when measured by the Rorschach.

2. Scope and differentiation tendencies will show behavioral consistency in the approach to the Rorschach and to other perceptual tasks.

3. Scope and differentiation tendencies will show behavioral consistency in the approach to perceptual and to cognitive tasks.

4. Scope and differentiation tendencies, as indicated on the Rorschach, have personality correlates which will show themselves on another projective technique for the study of personality.

PROCEDURE

One hundred and thirty-eight undergraduates enrolled in the Introductory Psychology course at the Pennsylvania State University were the subjects. They were administered the following tests in a two hour group session: a Group Rorschach, a Picture Description Test, an Object Description Test, a Verbal Fluency Test (from Thurstone's PMA), a Word Sorting Test², the Levinson

¹ This article is based on a doctoral dissertation submitted to the Graduate School of the Pennsylvania State University. The writer wishes to thank Professors G. M. Guthrie, J. F. Hall, and K. R. Smith for their helpful suggestions.

² The Word Sorting Test, constructed by the author, consists of 26 groups of six words. Split half reliabilities of the two scales involved were .97 (scope) and .88 (differen-

Test⁸, and a Sentence Completion Test. Each of the Rorschach ink blots was flashed on the screen for three minutes then the subjects wrote on a sheet of paper three things that the blot looked like or reminded them of, plus some descriptive remark about each. After the test they marked the location of each response on a location sheet. The Picture Description Test required the Ss to write five line descriptions for each of two pictures projected on a large screen. The Object Description Test required them to write five line descriptions about "The Campus" and "Your house at home". For the Word Sorting Test the Ss were told that they were to be given sheets with twenty-six groups of words on them. They were told to describe the words in any way at all. It was announced that they had only fifteen minutes in which to do the task. At the end of the time they had to turn the page and work on the incomplete sentences. The session was over when they completed the Levinson Test.

The measures divide themselves into those of scope, differentiation, verbal fluency, and personality characteristics. The Rorschach scope measure was a modification of the usual location scoring system so that area size alone was the standard of measurement. The scope of the Picture Description Test was defined as the degree to which the subject mentioned all the major aspects of the picture in his description. Similarly, the scope of the Object Description Test was felt to be the extent to which all the major aspects of the entity were men-

tioned. Scope on the Word Sorting Test was scored as the number of items in the largest grouping of each set of six words.

Differentiation on the Rorschach was measured by the complexity of the form and the elaborations given to further characterize it. This was a simplification of the method outlined by Klopfer and is as follows: three points for unusually complex percepts, two points for human percepts and elaborated one level percepts, one point for usual percepts of definite form, e.g., bat and flower, zero points for semi-definite forms, e.g., cloud, stone. The Picture Description Test and the Object Description Test were scored for differentiation by a scoring system modified only slightly from that described above. It was felt that the Object Description Test measured the scope and differentiation of a concept. In the Word Sorting Test and the Levinson Test, where the perceived relationship *between* concepts are under study, the complexity of these ideas was measured by the accuracy and "centrality" of the relationship claimed for the words. "Vehicles" for example would be scored as more differentiated a response than "both have bumpers" when the relation between car and truck is being described.

Since much of the scoring involved judgments of complex material, the reliability of scoring was calculated for most of the tests. Pearson correlations between two scorers on random samples of forty records ranged from 1.00 to .91 for the different scales. From these results it is concluded that the measuring systems can be communicated to others and applied with high agreement.

As for the reliability of the scales, some indication of the likelihood that the scores would be similarly distributed on a retest is given by the Spearman-Brown estimates of reliability calculated from them. These estimates of test reliability range from .97 to .63 except for the scope measure of

tiation). Samples of the items are :

1. Daisy	Dandelion	2. Knife	Steam Shovel
Poplar	Buttercup	Fork	Spoon
Maple	Birch	Crane	Steam Roller

* The Levinson Test, described by Rokeach (8), requires S to describe in what way all of these terms might be interrelated with each other. The terms are:

Buddhism	Communism	Judaism
Capitalism	Democracy	Protestantism
Catholicism	Facism	Socialism
Christianity		

Object Description which had an estimated reliability of only .21. It was found that ambiguity in the term "campus" caused this. Some of these values are lower than those required for standardized tests, but, aside from the one very low value, they were felt to be acceptable in a group study to discover trends rather than in an individual setting for prediction.

RESULTS

The first hypothesis was that scope and differentiation on the Rorschach are relatively independent of each other. Although the Pearson correlation between them, .24, is significant at the .02 level of confidence it is so small that these variables may be considered sufficiently independent to warrant separate investigation.

The second hypothesis was that measures of scope and differentiation would show positive correlations between the Rorschach and the other perceptual test, Picture Description. The scope correlation was .16 and the differentiation correlation was .08.

The third hypothesis claimed a relationship between the Rorschach measures and their counterparts in the cognitive tests. The Object Description scope score, previously found to be unreliable, showed a surprisingly high correlation (.43) with the Rorschach scope measure. The differentiation measures correlated only .19. A comparison of the Rorschach with the Word Sorting Test and the Levinson Test also yielded statistically insignificant correlations for both scope and differentiation.

Because it was thought that there might be a relationship among these perceptual and cognitive measures, although not with the Rorschach, the intercorrelations between the tests were calculated. These were very low and insignificant except for a .35 correlation between the differentiation measures of Picture Description and Object Description. It was thought that differentiation scores might be partially a function of verbal fluency

but when these measures were correlated no significant relations appeared.

The fourth hypothesis was that individual differences in Rorschach scope and differentiation have personality correlates that would appear in a sentence completion test. Nineteen items that discriminated well in a pilot study were used. Discriminating trends in 78 of the records were found, then a cross validation was done with the sixty remaining records. Of the twenty-three meaningful trends noted in the first part of the examination only three remained at or near significance in the second group. These were:

- #18. Most people don't know . . .
(Low scope on the Rorschach is associated with giving personal material to this item.)
- #15. There are times . . .
(Low Rorschach scope is associated with slumps into depression.)
- #8. The worst courses are ones where . . .
(Deviants in Rorschach differentiation mention boredom disinterest, and other motivational aspects as opposed to specific, objective conditions.)

Among the trends found in the first sample, but not corroborated in the cross-validation, were items about the specificity-generality of the language used, the detailing with which people meet life problems, and the apparent maturity of reactions to threat. Many such interpretive claims for the Rorschach did not hold up with this test. An outstanding example of this is Piotrowski's assertion that a tendency to large scope on the Rorschach is representative of a tendency "to leave nothing to chance but to plan one's life so that all actions . . . contribute to the achievement of a paramount and all-embracing goal of life." One item, My life work . . . , appeared to yield definite indications of the clarity of one's plans for the future but the results showed no relation to Rorschach scope indices. It must be concluded from the almost chance number of

significant items that the sentence completion test did not discover significant and meaningful personality correlates of the two Rorschach dimensions.

Among the research questions raised by this study are whether greater ego involvement on the part of the subjects would have led to greater consistency of approach. A tachistoscopic Rorschach presentation would reveal whether visual scope and differentiation are a function of initial, momentary perception or of frequency of eye movements.

Conclusions based on this study must be drawn cautiously. These two general traits of approach may exist but the tests, through errors of definition or test construction, failed to sample them. On the other hand the tests were constructed so that approach to them could vary as it does to the Rorschach. They seem to fit the claims of the Rorschach theorists and as such are felt to be legitimate tests of the validity of Rorschach theory. Consequently the following conclusions are drawn:

1. Scope and differentiation, as measured on the Rorschach seem to be relatively independent of each other.

2. Scope and differentiation tendencies were not consistent when performance on the Rorschach was compared with performance on another perceptual test.

3. No reliable relationships were apparent for either scope or differentiation between the Rorschach and two cognitive tests. This finding calls into question the usual Rorschach interpretations for these scores.

4. Evidence for a number of hypothesized correlates of the two Rorschach variables was not found in a sentence completion test modified for the task.

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Prediction of Physiological Stress Tolerance¹ From Projective Tests: "The Focused Thematic Test"

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This paper describes the prediction of the individual response to a specific cardiovascular stress situation, by use of a thematic type projective test focused specifically on the affect state involved. This is one aspect of an on-going multi-disciplined project, in which psycho-physiologic correlations to experimental cardiovascular stresses are being explored. (1, 2, 3, 8, 9, 10, 12).

In the Stress and Fatigue Section of the Aero Medical Laboratory experiments have been under way determining the parameters involved in "G"-tolerance. The "G"-force is arrived at through the use of centrifugal forces in a human centrifuge. The level of "G"-force at which subjects black-out or lose their vision depends on the ability of the cardiovascular system to maintain the blood pressure at the head and eyes against the tendency of the centrifugal force of the centrifuge to pull the blood away from the head. As the blood pressure compensatory mechanism fails, peripheral vision, then total vision is lost. This point is popularly known as black-out. Seconds later, if the "G"-force is maintained, unconsciousness occurs. Thus, the human centrifuge represents an excellent experimental situation in which to study cardiovascular stress responsiveness.

Variations in black-out level are very obvious among different subjects and in the same subject at different times. Due to dependence of "G"-tolerance upon cardiovascular responsiveness, and due to the known influences of emotional states on the cardiovas-

cular system, it seemed reasonable to consider the emotional state as one of the possible important parameters to be measured in the assessment of "G"-tolerance variations.

Anecdotal material suggested that emotional changes seem to be associated with "G"-tolerance shifts, and that there were apparent psychological differences between subjects who were characteristically low "G" and those characteristically high "G". High "G" subjects appeared more outgoing and aggressive than low "G" subjects. Low "G" subjects responded in the human centrifuge situation with more manifest anxiety.

Two subjects observed for a period of eight months revealed highest black-out levels when angry, in control, or relatively free from anxiety. Lowest black-out levels were obtained when they were worried, depressed, or anxious.

These observations were similar to those of Funkenstein (4, 5) who demonstrated that subjects made angry showed an increase in blood pressure in response to a mild cardiovascular stress, while those made primarily anxious showed a prolonged decrease in blood pressure in response to the same chemical cardiovascular stress. Mecholyl, a hypotensive agent, was the stress employed.

These differential blood pressure changes were found by Funkenstein to be associated with certain apparent biochemical shifts. The hypertensive response was associated with a nor-adrenaline-like reaction, while hypotensive responses were related to adrenaline-like reactions. (Nor-adrenaline is a vasoconstrictor, while adrenaline dilates peripheral blood vessels.)

¹ Paper read at Annual Meeting of American Psychological Association, Chicago, Illinois, 4 September 1956.

These findings in human subjects were an outgrowth of the earlier work of Hess (7), Von Euler (11), and others, who demonstrated similar behavioral changes in cats associated with adrenaline/nor-adrenaline excretion shifts upon stimulation of different hypothalamic centers.

The significance of this preceding work was, that if affect changes as delineated above resulted in alterations in "G"-tolerance, nor-adrenaline and adrenaline discharges associated with these affect changes could be the biochemical mechanism through which the altered physiologic response might operate. Thus, the presence of aggression or hostility may be related to nor-adrenaline increases, while the presence of free floating anxiety is related to adrenalin increases. Preliminary confirmation of this hypothesis was seen in the work of Goodall (6), who showed that nor-adrenalin levels were higher among high "G"-tolerance subjects and lower in subjects who blacked-out at less "G"-force.

This reasoning that "G"-tolerance was related to direction of aggressive expression led to the development of a projective test, loaded with aggressive content and symbols in the hope that this test might discriminate high from low "G"-tolerance subjects.

Eleven cards were designed depicting persons in various situations and presented to high and low "G" subjects who were asked to tell a story about each picture. Because the test was specifically designed for use with Air Force Personnel, specific Air Force situations were depicted, for example: one card pictured an encounter with Air Police; another pictured a situation involving fighter-bomber planes. The stories of high and low "G"-tolerance subjects were then compared and preliminary criteria of differentiation worked out.

High "G" subjects tend to identify with the aggressor, and tell active stories in which the hero is independent, persists in goal-directed behavior, is hedonistic or impulsive and is com-

fortable about expressing aggression.

Low "G" subjects identify with the aggressed against and tell passive or static stories in which the hero is dependent, easily gives up his goals, is reality oriented or internally inhibited, and either denies or is uncomfortable about the expression of aggression. Occasionally high "G" subjects show guilt in relationship to mother. Frequently, one of the stories allows evaluation of an additional factor: high "G" is equated to consistent angry feelings; low "G" with persistent anxiety or guilt. For example: Card one, which portrays a man looking at a wall, on which are displayed 4 vacation posters; a hunting scene; a game of tennis; a couple dancing; and a figure relaxed in a hammock — usually allows evaluation of the activity — passivity continuum, impulsiveness vs. reality oriented or internally inhibited and occasionally identification with aggressor or aggressed against. Thus, a typical high "G" story in this card might read as follows:

"THIS MAN HAS BEEN RUSHING HOME FROM WORK; SUDDENLY, HE SEES THIS SIGN (score high for activity) — HUNTING — OH BOY! — SO HE BUYS A GUN AND HE GOES HUNTING (score high — identification with aggressor) — NEXT DAY HE'S IN THE MOUNTAINS AND GETS THE FIRST DEER OF THE SEASON (score high for impulsiveness).

A low "G" story might be the following:

"THIS MAN IS STANDING AND LOOKING AT THE VACATION POSTER (score low — static story) — IT'S A COLORFUL SCENE, AND HE KNOWS THAT PEOPLE MAY THINK THEY HAVE FUN, BUT IT'S REALLY NOT FOR HIM — SO HELL GO HOME (low — internally inhibited).

In Card Two, which depicts a man, his head propped on his hand, seated on a table on which there is a book and some boxes (probably radio equipment) — in addition to the above factors, independence vs. dependence and persistence in goal directed behavior or degree of stubbornness may be evaluated. A typical composite

high "G" story to Card Two would be as follows:

"THIS MAN IS DEEP AT WORK, TRYING TO SOLVE THE PROBLEM OF HOW TO REPAIR HIS RADIO (score high for activity)—HE'S ALL ALONE AND FEELS CONFIDENT THAT HE'S GOING TO SOLVE THE TASK ALONE (score high—independence). AFTER MANY HOURS OF HARD WORK, TRYING DIFFERENT PATTERNS AND REALLY SWEATING IT OUT, HE MAKES THE RIGHT CONNECTIONS AND SOLVES THE PROBLEM (score high—persistence).

A low "G" story:

"THIS MAN HAS JUST BEEN FIRED (score low — identification with aggressed against). HE'S SITTING AND IS WORRIED. DOESN'T KNOW WHAT TO DO. HE FELT HELPLESS TO DEFEND HIMSELF. (score low — discomfort with aggression). HE WISHES SOMEONE WOULD HELP HIM (score low—a plea for dependence).

Two scoring methods were used; (a) a clinical impression of the total test responses; and (b), analysis of the stories based on the 6 cards, which preliminary studies indicated were most likely to elicit stories allowing assessment of the above factors.

Those factors present in a story were graded on a system identifying high as top score, and low as bottom score, from zero to six. Total points, divided by the number of factors identified in a story, represents the score of the story.

The resultant scores totaled for the six stories allow the grading of subjects into a high-low division using a score cut-off at 17 points.

It should be stressed at this point that the identified criteria of discrimination are preliminary. Some are inconsistent factors. It is also unlikely that all the factors have equal value as has been implied in the scoring system. Some of the criteria may later turn out to have maximal values, while others are relatively less important. Also, those cards not presently scored may give valuable cues.

Nevertheless, it would appear that, as used at present, the test does seem

to discriminate black-out levels with a high degree of accuracy.

In order to test the method, two psychologists unfamiliar with the test or subjects, were called in. They were introduced to the frame of reference and the discriminating factors and asked to differentiate 13 subjects selected from the extremes of the distribution, on a high-low basis. The protocols of six low and seven high subjects were used. Both psychologists independently and correctly placed 12/13 of the subjects, using an over-all clinical evaluation while taking the discriminating factors into account.

The initial subject population was the regular Aero Medical Laboratory centrifuge panel. This consisted of 33 subjects between the ages of 20 and 40 years, who are presently in the Air Force. These subjects were known personally to the test authors, although their "G" tolerance scores were not known. On the basis of the Focused Thematic Test scores, subjects were divided into high and low categories of "G". In the low category, 15 of the 16 subjects whose "G" actually measures 3.7 or less, were correctly placed, while 13 of the 17 subjects with a "G"-tolerance of over 3.7 were placed correctly. These results are significant at an .01 level ($Z = 4.08$).

Two further population groups were tested with the Focused Thematic Test using a double blind approach. The judges (the test authors) had no contact with the subjects; also the person administering the test did not know the actual "G"-tolerance scores of the subjects.

1. The first of these cross-validation groups consisted of 15 Air Force personnel. All of these, but one subject, had a "G"-tolerance of over 3.7 and, therefore, fell into the high category. 14 of the 15 were correctly identified as high "G".

2. The second cross-validation group consisted of 23 male graduate students, medical students or other personnel of the University of South-

ern California School of Experimental Medicine. In this group, 6 of the 9 low "G" and 12 of the 14 high "G" group were correctly placed. This proportion is significant at the .05 level ($Z = 2.57$).

The apparent decrease in sensitivity seen in this second cross-validation group could be, in part, due to the decreased specificity of focus of an Air Force test, when applied to a college population.

In conclusion, it should be emphasized that it is felt that the preliminary success with this test was due to the use of a focused frame of reference. Personality factors alone would not differentiate, since it has already been noted that all conceivable personality types exist among subjects who black-out at various G-levels. The important parameter seems to be the affect state and its biochemical correlates which result in physiological alterations. The kind of person the subject is, is only important insofar as it determines what stresses he will respond to, and how he will handle those stresses.

Thus, by constructing a new test focused specifically on the affect states, which seemingly were most related to an important biochemical determinant of a physiologic response, it was felt that a more precise correlation could be made than by using more familiar personality assessment psychological tests.

By using this focused test approach, with attention paid to possible specificity of psycho-physiological problems, it is suggested that more precise relationships may be demonstrated between psychological and physiological aspects of the individual.

SUMMARY

A thematic type test focused on the area of the direction of and comfort in handling aggressive stimuli and situations, was used to predict the "G"-tolerance of 3 groups of subjects.

Adrenalin/noradrenalin ratios, "an-

ger-in"/"anger-out" directions of aggression, and blood-pressure patterns were integrated on a basis for predicting "G"-stress tolerance from projective tests. It was predicted that high "G"-stress tolerance would relate to outward aggression, while low "G"-stress tolerance would relate to aggression toward the self. "G"-stress tolerance was determined in a human centrifuge and direction of aggression was elicited with a T.A.T.-like story test.

In a preliminary sample, two psychologists independently made correct placements of 12 out of 13 subjects that were selected from the extremes of the distribution of "G"-tolerances, from the stories told to the Focused Projective Tests.

High "G"-stress tolerance subjects tell of heroes who take an obdurate, aggressive, and impulsive role. Low "G"-stress tolerance subjects tell of heroes who are dependent, inhibited, and controlled by others. Two further validation studies in which the judges predicted the high/low "G"-tolerances from the stories of the Focused Thematic Tests were significant at the .01 level for the first group which was an Air Force population, and significant at the .05 level for the second group, a student population.

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Conflict-Related Stimuli as Elicitors of Selected Physiological Responses

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INTRODUCTION

Many times, in research especially, the need arises for stimuli which will selectively elicit specific responses from subjects whose personalities are characterized by a particular stimulus sensitivity.

The present report concerns several projective-type stimuli which were found to have fairly specific psychological significance when used in a particular fashion. The data to be presented were derived from the use of TAT and other similar pictures in an effort to determine whether or not the subjects' personality characteristics were related to the specific material depicted in the stimuli.

In the course of a study of the psychodynamics of the personality structure of peptic ulcer patients it was necessary to find laboratory stimuli which reliably evoked particular types of physiological responses in persons considered to be primarily conflicted concerning either passive-dependency, hostility or sexuality. The physiological responses under study were respiration rate, GSR and heart rate.

Although several series of stimuli were employed with patients other than those described in this final report, only the results of the statistically successful procedures will be discussed.

PROCEDURE

Four pictures were selected: 1) A neutral picture was a glossy print photograph of Card 12BG from the TAT series (18).¹ 2) The hostile picture was a similar photograph of a pencil sketch drawn especially for

this study.² There are two figures in this picture; one, quite indistinct seated in the lower left corner, and the other, a muscular man with manacles on his wrists which are raised above his head. He is about to bring the manacled hands down on the head of the seated figure. The aggressing figure has an enraged expression on his face and his arm and chest muscles are taut with tension. 3) The passive-dependent stimulus was a photograph of Card 6BM from the TAT series (18). 4) The sexual stimulus was a photograph of a painting taken from *Esquire Magazine* (9).³ It is a picture of a young woman lying on a couch with her body covered from the waist up by a dressing gown which is open from the waist down. She is wearing a pair of white briefs but her hips and bare legs are clearly visible. She is reaching up to embrace a man who leans over her.

In order to control as much as possible the interpretations the subjects made of each picture, the presentation of each was accompanied by a so-called structuring statement. For the neutral picture the statement was, "Imagine yourself in a situation like this. It's a nice summer day where you can relax and really take it easy."

With the presentation of the hostile card the examiner stated, "Put yourself in this fellow's position. Your feelings are breaking loose and you're going to do something that you've wanted to do for a long time."

For the passive card the statement was, "Think of yourself as this kind of fellow, always depending upon your mother for help."

¹ Special acknowledgment is due Mr. Dirk Gringhuis for this picture.

² The editors of *Esquire Magazine* kindly granted permission for the use of this picture for research purposes.

³ The editors of the Harvard University Press and Dr. H. A. Murray agreed to allow the writer to have the cards 6BM and 12BG photographed for research purposes.

The sexual card was accompanied by the statement, "Put yourself in this man's position. You're all set up and whatever you do now is entirely up to you."

Before, during and after the presentation of these four pictures each subject's autonomic nervous system activity as reflected by breathing, pulse rate and galvanic skin response was continuously recorded by means of a Keller Polygraph (2). The measures which were used were respiration rate, heart rate and a function of the intensity and duration of the galvanic skin response for the first minute immediately following the presentation of each card.

The records obtained were inspected and each of the three physiological responses was quantified. Thus, for each subject there were four initial scores for each of the three physiological systems; the respiration rate observed during the first minute following the presentation of the four cards, the heart rate during the first minute following the presentation for each of the cards and GSR following presentation of each card.

The final scores which were subjected to statistical analysis were the differences between the activity level in each of the physiological systems observed following the patient's viewing the neutral picture, and the level of activity observed in each system following the presentation of each of the other cards. For respiration rate the unit was the number of inspiration-expiration cycles per minute, and for pulse rate the unit was heart beats per minute. For GSR the scoring was done in a somewhat different fashion.

Various writers including Darrow (3), Freeman (5), Hunt and Hunt (6) have presented several different scoring systems for the galvanic skin response phenomenon. The scoring methods advocated by these writers vary from the simple number of ohms decrease in resistance to comprehensive formulæ which take into consideration the background resistance,

the number of ohms decreased in resistance, rapidity of return of the resistance to the pre-stimulation level and other factors. In general, the most frequently mentioned aspects of this phenomenon which are considered to be indicative of the intensity of the galvanic skin response are: 1) actual number of ohms decrease in resistance, 2) the rapidity of recovery of the resistance level and, 3) the original pre-stimulation level of resistance. Hunt and Hunt (6) have clearly shown that the latter variable, basal resistance, is unimportant if the successive measurements of the GSR are made from the same level. This condition was fully met by the present design in that the GSR measures which were compared with one another were made upon the same individual, and between stimuli the palmar resistance was allowed to return to its original pre-stimulation level.

The unit of measurement employed in this study for the GSR function was the area in inches above the base level which was enclosed by the line resulting from the upward deflection of the pen writer during the GSR for the period of one minute immediately following the presentation of each card. In this way the units employed reflect not only the intensity of the response, but its duration as well.

Following the suggestion of Ax (1) the difference scores for responses in each system for each picture were divided into quartiles on the basis of the base level value, and T scores were then assigned to each obtained difference, the actual T score value of a difference depending in part upon which quartile was being considered. That is, for a particular subject whose base level respiration rate was 15 cycles per minute; an increase of two such cycles might be given a T score of 60 or one standard deviation above the mean, while with a patient whose basal respiration rate was 22 cycles per minute, an increase of the same amount following stress might be assigned a T score of 70

or two standard deviations above the mean.

In this fashion each patient obtained three T scores for his physiological responses to each stimulus; one T score for the change noted between base level and response in GSR, another T score for the change between his respiration rates and a third for his response in pulse rate when presented with each stimulus. In total each patient was given nine separate T scores, one each for his three physiological responses to each of three stimuli.

In order to obtain an over-all estimate of autonomic nervous system arousal the T scores for a subject's response to each card were combined into an over-all autonomic change score. Each patient's T scores obtained for his responses in respiration, pulse rate and GSR to each card were averaged to yield one T score indicative of his autonomically mediated response to each stimulus.

SUBJECTS

The data on which the validity of the stimuli was based were obtained from 20 patients selected from

those who were referred to the Clinical Psychology Service of the Veterans Administration Hospital, Dearborn, Michigan. The basis on which the patients were selected for this purpose was the specific statement, made or approved after review by a staff clinical psychologist, that the primary source of a man's anxiety was conflict concerning the expression or control of either hostile-aggressive impulses, passive-dependent needs or heterosexual impulses. A verbal statement to this effect was not accepted, but rather the criterion was the integration of such an impression in a written report which became a permanent part of that patient's file. The basis for making such a statement was most often a battery of psychological tests but not infrequently it was extended psychotherapeutic contacts with the patient. The diagnostic labels and other identifying data concerning those 20 patients are given in Table I.

In summarizing the psychological testing on all patients routinely referred to the Clinical Psychology Service in the above mentioned hospital during a period of six months, 20

TABLE I. Identifying Data For Subjects In Stimulus Validation Study

Diagnosis	Age	Years of Educ.	I. Q.	Formulation	Based on*
1. Anxiety Reaction	57	11	133	H	1
2. Diabetes	27	12	100	S	1
3. Anemia	36	10	97	P	1
4. Anxiety Reaction	27	10	112	P	1 & 2
5. Dermatitis	31	12	124	S	1 & 2
6. Anxiety Reaction	29	12	100+	S	1 & 2
7. Diabetes	39	12	-----	P	1
8. Atopic Eczema	37	12	124	S	1
9. Alcoholism	33	13	114	P	1 & 2
10. Chron's Disease	24	12	Hi. Aver.	H	1 & 2
11. Anxiety Reaction	28	10	Average	H	1 & 2
12. Epidemophytosis	40	16	125	H	1
13. Hypoglycemia	35	13	Superior	P	1
14. Anxiety Reaction	35	3	-----	H	2
15. Anxiety Reaction	32	8	-----	H	1
16. Anxiety Reaction	30	11	-----	S	1
17. Psychoneurosis Anx.	28	10	102	P	1
18. Situational Maladjust. in Passive-Dependent Personality	38	8	96	P	1
19. Schizophrenic Reaction, Simple Type	39	8	111	H	1
20. Alcoholism	40	9	108	P	1

*1. Battery of psychological tests.

2. Psychotherapeutic contacts.

TABLE II. Analysis of Variance — Validation Groups
ANS Arousal T Scores

Group	Hostile	Stimuli Passive	Sexual	Sums for Groups	Means for Groups
Σx	369	332	353		
Hostile M	52.7	47.4	50.4	1,054	50.2
N=7 Ex ^a	19,537	15,884	17,895	53,316	
Σx	397	425	397	1,219	
Passive M	49.6	53.1	49.6		50.8
N=8 Ex ^a	19,773	22,655	19,865	62,293	
Σx	223	227	256	706	
Sexual M	44.6	45.4	51.2		47.1
N=5 Ex ^a	10,007	10,375	13,224	33,676	
Totals Σx	989	984	1,006	2,979	
Stimuli M	49.4	49.2	50.3		49.6

Summary

Source	Sum of Squares	DF	Variance	F	Significance
Groups	137.5	2	68.7	3.69	<.05>.01
Stimuli	13.3	2	6.6	.35	NS
Interaction	280.2	4	70.0	3.76	.01
Within	946.7	51	18.6		
Totals	1377.7	59			

could be found who fulfilled the criteria set up. Seven of these patients were considered to be primarily conflicted concerning hostile-aggressive impulses, eight to be primarily conflicted over passive-dependent needs and five were considered to be conflicted for the most part in relation to sexual problems.

RESULTS

This group of 20 patients was subjected to the previously described procedures and the physiological measurements were obtained following their viewing these pictures. The records were scored as already discussed and analysis of variance was employed to determine whether or not there was a significant relationship between type of conflict and types of stimulus to which the major response was made. The analysis of variance summary is presented in Table II. The results indicate that there is a definite relationship, significant at the one per cent level, between these groups of patients and the stimuli to which each showed his greatest response. There was no statistically significant difference between the aver-

age response made by the entire group to each of the pictures, and, although the difference between the average response of the groups was statistically significant, the theoretical significance is unclear. On the basis of these findings, the validity of these three pictures in stimulating autonomic responses in the presence of particular types of conflict seems to be reasonably good.

It should be noted that while these data indicate a significant relationship in the observed direction, the validity of these stimuli is not indicated in use with individual subjects. The subjects employed were the "distilled essence" of these three types and furthermore were dealt with as groups. The findings, however, do indicate that, for research purposes and with groups of subjects, these stimuli may be useful in evaluating responses to conflictual situations.

SUMMARY AND CONCLUSIONS

The present report concerns the identification of visual stimuli which reliably and selectively evoke physiological activity (respiration rate, GSR, heart rate) in persons considered to

be primarily conflicted concerning passive-dependent needs, hostility, or sexuality. On the basis of the data presented it has been concluded that:

- 1) The stimuli described evoke changes in physiological activity which agree, at a statistically significant level, with the clinical formulation concerning the conflict area.
- 2) While the relationships found are not of sufficient magnitude to allow their interpretation with individual subjects, their level of significance suggests their usefulness in research with groups of subjects.

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The Prediction of Family Interaction from a Battery of Projective Techniques

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This study represents an attempt to make systematic use of projective techniques in the study of family interaction. It is part of a larger study of the families of schizophrenics which contains, in addition to projective data, detailed family histories from diagnostic and therapeutic interviews with all family members. We shall present material from only one family, which necessarily precludes generalization. It is not our purpose to present the test results of this family as characteristic of other similar families but rather as an illustration of a method.

The data consist of the interpretations and inferences contained in a report of the family based only on psychological test materials with no further information except the age, occupation, and education of each member. The accuracy of this hypothesized picture of the family was then evaluated in terms of information obtained from interviews with the family members, and impressions based on these interviews.

The psychological report on this family was written from the following points of orientation: (1) Our primary interest was in the interaction among the family members. (2) We focused on resemblances between children and parents in their patterns of needs and conflicts and the way in which these were manifested. We hoped in doing this to find clues to the developmental reasons for at least gross differences in children of the same family; in particular, the development of mental illness in one child and not in the other. (3) We also were looking for factors which would characterize the family as a whole: relatively unique behavior

which established a family climate. (4) Finally, we wondered if study of the test material from an entire family would increase our understanding of the individual members.

This study of one family is not intended as a validation of projective techniques. Nevertheless, this type of approach, if carried out on a sufficient number of subjects, has much to recommend it as a method of validation. It avoids two important limitations found in many validation studies. The first of these has to do with the criterion for evaluating the test results. It does not require, for example, that the tests differentiate among nosological entities nor between successful and unsuccessful employees. One may argue that it is doubtful that interview material and clinical impressions are more nearly accurate as criteria. This may very well be true, but as criteria, they are appropriate and relevant to the purpose for which projective techniques were devised: to describe the individual.

The second difficulty in assessing the validity of projective techniques lies in finding appropriate units of measurement. Formal scoring categories are still of unknown validity, and it is argued that their use violates the significance of the test as a whole. Schafer¹, in discussing this problem, has pointed out the advantage of using the test interpretation as the unit of measurement. By this procedure, it is possible to avoid the problem of losing the significance of the test as a whole. The interpreter is free to base his hypotheses on his total impression of a test or test battery. He

¹ Schafer, R. Psychological tests in clinical research. *J. consult. Psychol.*, 1949, 13, 328-334.

also is free to analyze the data without being forced to adhere to any particular scoring procedure. We have adopted this method of evaluating predictions by comparing them with information derived from the interviews. We believe that only by an accumulation of this type of evidence from individual cases can we begin to understand which areas of human behavior can best be described by projective tests.

SUBJECTS

The Benjamin family consists of the parents, a daughter of 19, and a son, 16, who is a patient at the Yale Psychiatric Institute. The father is a successful businessman, and the mother a housewife. The parents have a high school education. The daughter at the time of testing also had completed high school, and the patient was in his third year of high school when hospitalized.

PROCEDURE

Each family member was given a series of tests in two sessions. In the first period, 14 Thematic Apperception Test cards² and the Rotter Sentence Completion Test were administered. The second period was given over to the Rorschach and the Draw-A-Person. The Rorschach was administered and scored according to Klopfer's method. The Draw-A-Person was administered according to Machover's procedure.

Two psychologists worked independently at first, writing up detailed interpretations of the tests for each individual. One had administered the tests. The other had had no contact with the family. They discussed their

individual reports in order to resolve differences in interpretation and then considered each test, card by card and response by response, in order to assess the family as a whole and speculate on their interaction. The tests were considered in the following order: Rorschach, Thematic Apperception Test, Sentence Completion, Draw-A-Person.

After the test productions of the family as a whole were considered a general report was written, based on a previously devised outline. This was made up of 72 items under general headings. Only the general headings will be summarized here.

We described the factors which seemed to characterize the family as a whole. We were especially interested in any suggestion of tendencies to distort reality and the possible effects upon the children of such distortions.

The relationship between the parents was considered next, with regard to factors which drew them together initially, and changes in their attitudes toward each in the course of the marriage.

A number of the items referred to parent-child relationships. Did the parents seem to have conflicting roles for the child? Which was the preferred child of each parent? In what way did factors such as the sex of the child influence this preference? How did the child confide in the parents and how important was this to the parents? How did the parents react to the growing independence of the child and his movement away from the family ties?

The question of relationships outside the immediate family was also considered: the parents' strong ties to their parental homes or to individual interests, vocational or avocational.

After the report on the family had been written, it was analyzed into 333 discrete interpretive statements, each of which was intended to represent only one interpretation. Two raters working independently disagreed in 21 instances as to what constituted a

² The cards used were 2, 3BM, 3GF, 5, 6BM, 6GF, 7BM, 7GF, 9GF, 10, 12M, 13MF, 18BM, 18GF. The same series was given to every subject, regardless of sex. This was done because the BM and GF cards, designed as alternates, do not appear to be really equivalent. It was thought too that giving a subject cards designed for the opposite sex might elicit important information about sexual identification.

statement. The resulting agreement between raters, then, was 93%.

These 333 interpretive statements were then judged for agreement with the interview material. The judgments were made independently by the two psychiatrists in the study. They had taken no part either in the test interpretation or the interviewing of the family, but were thoroughly familiar with the interview material. The amount and richness of this interview material requires comment. Both parents were seen once a week for almost two years, for a total of 110 interviews. The patient's sister had a total of 29 interviews, and the patient had 3 or 4 therapeutic hours a week during this time.

The raters judged each interpretive statement to be in agreement with the interview material, in partial agreement, unknown, or in disagreement. The unknown rating was given when there was not enough pertinent information in the interview material to make a judgment.

It was necessary to assess the interjudge reliability. In rating any one statement it was possible for the judges to agree with each other completely or partially, or to disagree.

1. The judges were said to be in partial agreement on a statement when one judge rated it partial agreement and the other rated it either agreement or disagreement.

2. The judges were said to be in disagreement on a statement when (a) one judge rated it agreement and the other rated it disagreement, or (b) one judge rated it unknown and the other rated it either agreement, partial agreement, or disagreement.

The judges agreed with each other on 62% of the statements; they were in partial agreement on 11% and they disagreed on 27%. The percent partial agreement was divided by two and the result (5.5%) was added to the percent complete agreement (62%). In this way an overall rater agreement of 67.5% was obtained.

After both judges had made their

ratings independently, they discussed their disagreements and arrived at a joint rating. We were interested to see whether one judge's ratings prevailed over the other's in the joint ratings. This was found not to be the case. One judge had only three more of his original ratings represented in the joint ratings than did the other judge.

Classification of Predictive Statements

The statements were classified in four different ways, independently of the comparison with the interview material. In each instance two raters worked independently. The agreement was then computed and the final ratings were decided after discussion of the disagreements.

General, Stereotyped, and Idiosyncratic Statements. An important factor to be considered in the evaluation of the interpretive statements is the extent to which the family and its members are differentiated from families and people in general. Therefore, an attempt was made to determine whether the statements in the writeup which were judged to be in agreement were only safe generalizations which could be made about anyone.

It appeared that there were at least two types of statements which would be relatively undifferentiating. The first concerns behavior which is universally characteristic. Statements of this type, which we call General, differentiate one individual from another only when a rather extreme degree of intensity is specified. Thus "He is seething with hostility" is more specific than "He has feelings of hostility." A statement such as "the mother has a strong need for affection" was called General since everyone needs affection. Even if the interview material gave no evidence of more than average need for affection, the judges might be less likely to rate this statement incorrect than they would an Idiosyncratic statement such as "The parents' sex life may be somewhat bizarre."

A statement was called a Stereotype if it could have been made solely on the basis of group identification of the individual: e.g., socioeconomic status, age or sex, without information from the test material. This is not to say that the tests were ignored when these statements were made. On the contrary, they indicated which of many possible stereotypes might be appropriate. The prediction "They (the family members) are undoubtedly strongly upwardly mobile" might have been made only from the knowledge that the family is upper middle class, that the parents do not have college degrees, and that they are Jewish. However, the father in his Thematic Apperception Test stories made many references to the superiority of people with college degrees and the importance of reading the right books.

We made a larger number of Stereotyped statements than one ordinarily would in a psychological report because we were following an outline which forced us to attempt to answer questions about various activities for which there was often no direct evidence in the test material. These Stereotypes are not necessarily more likely to be in agreement with the interview material than other statements in the writeup, because they are not universally characteristic of the members of the group from which the stereotype is drawn.

Two raters worked independently to classify the statements. Those which were not judged to be General or Stereotyped were called Idiosyncratic. The raters agreed on 238 or 71% of the 333 statements. The final ratings included 32 General statements, 90 Stereotypes, and 211 Idiosyncratic statements³.

Statements about Overt and Covert Behavior. The problem of predicting overt behavior from projective test

material is a difficult one, and we were interested to discover if there were any difference in the judged accuracy of our predictions in this area as opposed to predictions of covert behavior.

The Covert category includes statements about defense mechanisms, other theoretical formulations of personality dynamics, personality traits, needs, feelings, and attitudes toward the self. Statements rated Overt were any which specified behavior, discussion of roles played by the individual, and attitudes toward others. It was difficult to decide how to rate statements about attitudes, since they imply both overt and covert behavior. We decided rather arbitrarily to split in the manner indicated, since attitudes toward others imply a communication between two people, whereas attitudes toward the self may not always be communicated to others.

There was 83% agreement between the raters. A total of 215 Overt and 118 Covert statements was decided on.

Group and Individual Statements. The next classification was into Group and Individual statements. Many of the predictions had to do with resemblances in the family, so that the same prediction was made for more than one family member. There was perfect agreement between the raters in this classification.

Personal and Interpersonal Statements. The fourth classification was into Personal and Interpersonal statements. The former refer to personality characteristics and the latter to some type of interaction between two or more people. The Interpersonal statements included, in addition to descriptions of behavioral interaction, statements concerning the attitude of one person toward another and reactions or feelings evoked by one person in another. This category also included statements about one person's feelings about the interaction of other members of the family, and descriptions of roles played by the individ-

³ The raters, who in this instance were also the authors of the report, may have been biased in the direction of making too few ratings of General and Stereotyped.

uals in the family. This classification became difficult when the predictions had to do with one person's attitudes toward other people in general. We became somewhat arbitrary about this. Such a statement as "He is essentially a hostile person" we classified as Personal since the emphasis is more on feeling than on interaction. Statements about a person expressing his feelings to someone else were classified as Interpersonal.

The two raters making the Personal-Interpersonal classifications disagreed on 24% of the statements. There was a misunderstanding on one aspect of the definition of the Interpersonal category which resulted in a consistent error, making it difficult to evaluate the agreement. When the disagreements resulting from the consistent error are removed, the agreement on the remaining items is 257 out of 291, or 88%.

The inter-judge agreement on these four classifications seemed high enough to make it worthwhile to use them in analyzing the data, since they might help clarify differences between the agreements and disagreements with the interview material.

RESULTS AND DISCUSSION

The results of the comparison with the interview material are summarized in Table I, for the statements as a whole and for the four classifications. Sixty-seven percent of the total number of statements were found to be in agreement; 9% in partial agreement; 8% unknown and 16% in disagreement.

Neither the General nor Stereotyped statements differed in accuracy from the Idiosyncratic statements. The Stereotyped statements were the most likely to be judged correct, but the Chi Square comparing them with the rest of the statements fell short of significance at the .05 level of confidence.

There was no overall tendency for the statements about Overt behavior to be any more or less in agreement

TABLE I. Distribution of Judgments of Agreement According to Four Independent Classifications

	Total No.	General No. %	Stereotyped No. %	Idiosyncratic No. %	Overt No. %	Covert No. %	Group No. %	Individual No. %	Personal No. %	Interpersonal No. %
Agreement.....	224	67	66	73	65	145	67	141	70	154
Partial Agreement.....	27	8	4	4	8	14	9	16	6	21
Unknown.....	28	9	6	7	9	9	8	20	9	19
Disagreement.....	54	16	3	14	18	37	22	25	14	40
Total.....	333	100	90	211	215	118	131	202	99	234

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than the statements about Covert behavior. When they were considered with the other two classifications, Group-Individual and Personal-Interpersonal, one difference appeared: the Overt statements in the Group category have a significantly large number of disagreements. (Chi Square = 3.95, $P < .05$, $df = 1$). Most of these are Group-Interpersonal statements about attitudes of family members toward each other.

The Group and Individual statements differ significantly in the proportion of agreements and disagreements (Chi Square = 7.94, $P < .05$, $df = 3$). Sixty three percent of the Group statements were agreements as opposed to 70% of the Individual statements. Twenty two percent of the Group statements were disagreements, and only 12% of the Individual statements were disagreements.

The Personal and Interpersonal categories do not differ significantly from each other in terms of agreement with interview material.

The Individual-Personal statements have the smallest proportion of disagreements and the Group-Interpersonal statements the highest (Chi Square = 4.00, $P < .05$, $df = 1$). The Group-Interpersonal statements refer to family interaction, and thus represent a greater departure from the test data than do the Individual-Personal statements about personality makeup usually found in test reports. The tests, apparently, are better sources of information about the individual than about his relations with other specific individuals. Nevertheless, we had some success in describing the family interaction and it is of interest to examine the agreements and disagreements in this area.

AGREEMENTS

The Interpersonal areas will be summarized here. No attempt will be made to describe all of the agreements in these areas. The Personal categories will be considered later in the

section on individual members of the family.

The interview material and the predictive statements both emphasized the intense need of both parents and the patient for closeness with others, approval, and affection. It was manifested primarily in an unusual lack of reticence and sense of personal privacy in the family.

The father's feeling of inadequacy as a man was quite apparent, and a number of predictions were made about the influence this would have on the other members of the family. We thought, for example, that the father would be at least tempted to prove his masculinity by having extramarital affairs, although we were not sure he would actually carry this out. He reported having several. It was predicted that the father would push the patient to prove his masculinity, encouraging and fostering sexual activities and athletic interests. This too was borne out in the interviews.

A basic distortion in the parental roles was hypothesized, on the basis of the father's impulsiveness and immaturity, which would not be likely to be counteracted by the passive mother. The parental attitudes of overindulgence and lack of dependable authoritative control we felt would lead to acting out in the children.

The father was seen apparently correctly as the focus of jealousy in the family. Destructive quarreling was correctly predicted. The father's need to be close to his children, to know what they were thinking, and the seductive interest of both parents were picked up. The patient had an unusually dependent relationship with his parents. The daughter appeared to be separating herself from the family, but was jealous of the attention her brother was receiving.

Partial Agreements

An example of partial agreement was the discussion of the expression of anger. Temper outbursts were correctly predicted for the father. They

were also predicted to a lesser degree for the mother and the patient. The patient's therapist pointed out that the patient acted out in a hostile way, but denied angry feelings. When his parents came to visit him he sometimes left them, saying he wanted to watch television instead. Neither he nor his parents could see anything hostile in this. The mother expressed anger indirectly in a masochistic way, by talking so much that she incurred the irritation and anger of her family and outsiders as well. The extreme degree to which the whole family made use of denial was recognized, but it was difficult to predict how it would influence the expression of hostility.

Disagreements

The largest single group of disagreements could be attributed to a particular error in interpretation concerning the relationship between the parents. On the basis of the father's Sentence Completion test, which showed an unusual amount of concern with his wife and family, we hypothesized a relationship where the father took the more nurturant role, to his wife as well as his children. For support we noted a Rorschach response of the patient: "two butlers rolling out a red carpet for the Queen of Sheba", and the mother's intense need for affection and attention. It seems worthwhile to note in some detail the errors stemming from this hypothesis.

We stated that the father probably waited on the mother and paid her a great deal of attention. The actual situation during the patient's life time was one of constant quarreling, extreme lack of consideration by the father for the mother, open contempt, and occasional blows. The father at the time of the patient's hospitalization was painfully guilty about this behavior toward his wife and it's effect on the patient. In the two years of weekly individual therapeutic interviews with the parents, there was striking improvement in the mar-

riage. The father came to exhibit the interest in his wife which we had thought to be present at the time of testing, although he was not controlled by her as we had hypothesized. The father was always much involved with his children and his guilt when B. was hospitalized was intense. Both parents were capable of change and their son's illness provided motivation and opportunity.

Because of our assumption that the mother's role was one of demanding dependence, we hypothesized that she would be particularly unable to tolerate dependent behavior in the father, and we stated this as the quality in her husband which Mrs. B. would like least. We had underestimated the degree of explosive temper and irritability in the father, which was, and still is to a lesser degree, the source of the mother's major difficulty with her husband. We also assumed, in discussing ways of disciplining the children, that the parents would insist on consideration for the mother.

One partial agreement is interesting in view of this misinterpretation. We felt that the father would find the mother's demands for attention a burden and that this would constitute the quality which he liked least in his wife. This seemed to be true, but not quite in the sense in which we conceived it: that is, the mother's demandingness was expressed indirectly by a flow of incessant talk, full of irrelevant detail, which Mr. B. found extremely irritating.

Statements which could not be evaluated:

The predictions in the unknown category had to do with sexual activities of the family, family activities in the home, attitudes of one member toward another, predictions into the future, and formulations of personality dynamics. Only a few of the formulations of personality dynamics were judged unknown; they appeared in the other categories when there was sufficient evidence to evaluate them.

INDIVIDUAL FAMILY MEMBERS

When the family members are considered individually, there are some striking differences with respect to the four classifications of data.

The patient received a significantly large, and the father a significantly small proportion of General statements. (Chi square=16.37, $P < .001$, $df=3$). There were no significant individual differences with respect to the Stereotyped items, nor were there any with respect to the Overt-Covert classification.

The individual family members differed significantly with respect to the Group-Individual and Personal-Interpersonal categories. (Chi square=41.48, $P < .001$, $df=9$). The majority of the items referring to the patient are Individual-Personal (personality description) and Group-Interpersonal (family interaction). There are only two items referring to the patient in the Individual-Interpersonal category (interaction with specific family members.) The significance of this seems to be that the patient was seen not as an individual interacting with other individuals, but as the dependent child of his parents, not yet separated and individuated from them.

The majority of the statements referring to the father fell in the Interpersonal (family interaction) categories. This reflects the degree to which the father was seen as the focus of the family, exerting an important influence on the development of the children.

The daughter was described in a very small number of statements in the Interpersonal (family interaction) categories. This reflects the impression (corroborated by the interviews) that she had separated herself from the family, while the parents and patient were still caught up in an excessively inter-dependent triangle.

The parents were given almost twice as much attention in the report as were the children. This apparently is due to the fact that the report was

oriented toward explaining the effect of the parents on the personality makeup of the children.

Seventy percent of the statements about the patient were agreements: a larger (but not significantly so) percentage than for any other family member. However, the qualitative impression is that the patient was the most poorly depicted as an individual. This is explained by the large number of General statements referring to the patient. Of all members of the family, the patient was the most difficult to understand as an individual. This is not surprising in view of the fact that he was psychotic, with a diagnosis of paranoid schizophrenia. His behavior during the tests was fairly well organized, and he managed to hide his more important delusions. The psychologists could only conclude that he was covering over a good deal of material. The degree of disorganization in the patient was undetermined, although it was apparent (particularly from his drawings) that he was in a state of acute turmoil.

The father emerged more clearly as an individual. The degree of compulsive behavior in this man was underestimated, however. More striking in the test material were his aggressiveness, volatile emotionality, and need to prove his masculinity. An implication of this need which perhaps might have been emphasized more was the degree to which he bragged and displayed his wealth in order to prove his competence as a man.

The description of the daughter proved more accurate as time went on and the social worker was able to establish a relationship with her. There had been disagreement between the psychologists as to whether she might have had sexual relations. We learned later that she had been involved in an affair in which she played a sado-masochistic role. There seemed sufficient evidence to corroborate the impression from the test material that she would be likely to act out in a self destructive way.

SUMMARY AND CONCLUSIONS

A description of a family, based solely on projective tests given to all family members, has been reported and evaluated. The interpretation of the test material was focused on understanding the interaction between the family members with particular reference to the influence of the parents' personalities on the children, the general themes characterizing the family as a group, and the different developmental problems confronting each child. Similar work has been carried out with several families containing a schizophrenic child, and with three volunteer families in which there was no apparent mental disorder. Although this study was not undertaken as a validation of projective tests, the method could be used for this purpose.

Material from one family was presented to illustrate the procedure. The tests were administered and interpreted with no knowledge of the family except their ages, education, religion, the father's occupation, and the fact that the son was hospitalized at the Yale Psychiatric Institute. The interpretations based on the test material were compared for agreement with extensive material from all members of the family. The parents were seen weekly for almost two years, the daughter was interviewed 29 times, and the patient was undergoing intensive psychotherapy during this time.

The collaboration of two psychologists was an especially valuable aspect of the procedure, since the scope of the predictions was both wider and more specific than is usual in psychological reports. Many implications for family interaction were not realized until the test material had been discussed thoroughly. There also were interpretations in the independent write-ups which were discarded in the combined report because they seemed incorrect and which would have been at variance with the evidence in the

interviews. There was little disagreement in the independent interpretations, but a definite tendency for each psychologist to concentrate on different aspects of the material. Thus the joint picture of the family was more comprehensive than either of the individual efforts.

Probably the majority of the hypotheses about family resemblances and partial identifications came from the Rorschach. Clues concerning overt behavior by which important needs were gratified were supplied by the more structured tests such as the Thematic Apperception Test and Sentence Completion. The Thematic Apperception Test seemed to be the best source of information about attitudes toward other members of the family. The Draw-A-Person was used primarily to supply evidence of attitudes toward the self and the opposite sex.

The interpretive statements derived from the tests were classified in four different ways independently of the comparison with the interview material. This was done in order to separate the general statements which could be ascribed to many people from the more specific statements, predictions of overt behavior from covert, and statements about individuals from those about family resemblance and interaction.

The raters did not feel in a position to judge with assurance the degree of congruence between the interpretive statements and interview material until the family had been seen in a semi-therapeutic setting for almost two years. The length and intensity of contact with the family proved very important. A preliminary evaluation of the interpretive statements was made after the patient had been hospitalized for about six months. The parents had been seen regularly during that time, and the sister had been interviewed five times. In this preliminary evaluation, 31% of the statements were put in the unknown category, whereas only 9% remained in

that category in the present evaluation. Furthermore, there were disagreements in the first evaluation which were corroborated in later interviews, and vice versa. It is clear that this kind of evaluation of test material cannot be done on the basis of a few interviews. Certainly many important questions about this family remain unanswered, even after almost two years of contact with them.

In the present evaluation, the agreements constituted two thirds of the total number of statements, 9% were partial agreements, 8% were undetermined, and 16% were disagreements. The individual personality descriptions contained the highest proportion of agreements. The statements most likely to be in disagreement were predictions of attitude of one family member toward another, and statements about family interaction.

In considering the family members separately, it was found that the patient received a significantly large and the father a significantly small number of General (relatively undifferentiating) statements. Other significant differences in the relative number of individual and interactional statements appear to reflect at least gross differences in the roles played by the members of the family. The father was the most active influence in the family, while the mother played a more passive role. The daughter was separating herself, while the patient was the dependent child, not yet individuated from his family.

The B. family does not represent one of the most successful productions of the interpreting psychologists be-

cause of the basic error in interpretation which brought a number of other misinterpretations in its wake. This was known before the present study was undertaken. The family was selected because there was extensive information about them, and because elaborate precautions had been taken to conceal the information from the psychologists. Furthermore, it proved important to study the misinterpretations, and to consider how they might have been avoided.

It has not been our customary procedure to make blind interpretations of the tests in the larger study of the families of schizophrenic patients. The test material can be put to better use when the information about the past and present functioning of the family is known. The blind interpretation of several families has helped us understand, however, what can be predicted about family interaction. They have, in fact, given us courage to venture farther in this area than at first seemed possible.

The study of all members of the family has implications for the understanding of the individual. Hypotheses about a person may be confirmed by the attitudes displayed toward him by the other members of his family. Furthermore, the individual's self-concept may differ in important respects from the ways in which the members of his family perceive him. The study of the family as a whole increases understanding not only of the family interaction, but also provides the opportunity to see the individual through the eyes of his family.

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Perception and the Rorschach

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Like Hermann Rorschach himself (48), most users of the Rorschach test are agreed that the test is essentially a perceptual one (e.g., 51); yet few have attempted a strictly perceptual analysis of what happens when a subject looks at a card and produces his responses (2, 3, 4, 6, 9, 32). Clearly the classical principles of perception apply in this area (e.g., 2, 9, 51), and the more recent "new look" (e.g., 7, 12, 38, 41, 61) material is also relevant. Although there are some methodological differences in approach between the Rorschach worker and the perception psychologist, both could profit from an interchange of ideas about perception and the Rorschach.

AUTOCHTHONOUS PRINCIPLES OF PERCEPTION AND THE RORSCHACH

Any percept is organized according to the autochthonous principles, and Rorschach responses are no exception (9, 32). The subject responds to a total organization of the material on the card (6); he sees it as one gestalt (or, in time, as several different ones). The interrelatedness of the total percept is attested to by the concept of determinant; if any determinant were changed, the total percept would undergo a reorganization. In Tinbergen's sense (53), the determinants are "releasers" (as also pointed out by Berliner (6)); a determinant is that without which the response would be different. Lazarus' study (37) of color may be considered an example of the investigation of such a releaser function.

The traditional gestalt laws of organization (58) hold for the Rorschach percept. Thus the principles of *similarity* and *proximity* operate in the perceptual segregation of any portion of a card as a D; similarly,

any W organizes the colored parts of the card by similarity and proximity. Whenever a colored area is seen as a separate D, similarity is the prime organizer. *Symmetry*, too, determines what portions of the blot are seen as belonging with what other portions, as perhaps in the red butterfly on Card III, where the cohesive forces already present because of the proximity of similarly colored and textured areas are enhanced by the symmetry of shape. *Good continuation* further may strengthen a particular articulation, as when certain Dds are ignored or cut off in a percept, and irregularities are not included, thereby making the percept more "prägnant" in the classical gestalt sense (e.g., 58). *Closure* operates in similar fashion, with missing elements in the stimulus provided by the perceiver, as in the closing of the D in the center bottom of Card III into a "pot". Such completion phenomena are not uncommon in Rorschach responses; in fact, they probably are more the rule than the exception. The perception of *contours*, and which area they are seen as "belonging" to is a function of all of the above principles, in the Rorschach as well as in all other every-day perception (60). Further, as Beck (4) has argued, there may be a relation between the creativity of the final percept and the intelligence of the subject: the more intelligent subject's percept may involve an analysis and a resynthesis of parts of the blot into a new, more inclusive organization. This speculation is reminiscent of Ternus' (52) work with apparent movement, in which he suggested that more intelligent subjects are more likely to include more of the stimulus characteristics in their percepts. Likewise, this kind of argument may account for the presumed greater use of M, texture, and the

like: the more intelligent person notices and uses more of the subtle as well as the obvious characteristics of the stimulus complex.

Through the organization of the incoming stimulus manifold the blot is seen as a figure (or, successively, as several different figures) on a less differentiated ground, and all of the classical (e.g., 35) *figure-ground* principles are of course applicable. The figure is seen as possessing the contour while the ground seems to continue behind it; the figure is more dense and "thinglike", more surfacy, etc. But in the case of the Rorschach blot there are more alternative figure-ground organizations possible than in such traditional diagrams as Rubin's vase (49); perhaps one could call the Rorschach stimuli multiple reversible figures, in that several equally, or almost equally "prägnant" organizations are possible for most cards. As Arnheim (2) writes, "The overall structure of each blot can be seen in several mutually exclusive ways." Card V is perhaps more difficult to see in many different ways, and hence the usual figure-ground reversal of various portions of the blot may be less likely here. But such reversals would be expected to occur not only within the blot, but between the blot and the white space as well, producing S responses. As Sir Cyril Burt (13) has shown, one would expect that with prolonged fixation any reversals would become more likely, as the number of reversals per unit time, for simple reversible figures in a laboratory experiment, is clearly a function of fixation time (e.g., 36). Perhaps this might explain why anxious subjects may tend to see more S: if they take longer to stare at the card before producing a response, a reversal is more lively to occur.

The occasional vista responses also are usually consistent with the autochthonous characteristics of the blot; in Card II, for example, seeing a tower at the end of a rectangular lake makes use of such factors as the usual

monocular distance cues like linear and aerial perspective, as well as the texture gradients recently emphasized by Gibson (18).

Further, the perceptual properties of certain cards or details would tend to make the perception of certain physiognomic (56, 57) ("tertiary" or "emergent") qualities more likely. For example Card IV, with its heavy black, may produce synaesthetic experiences of foreboding, darkness, or gloominess much like those produced by a sky filled with storm clouds; or, again the general emergent quality of Card VII is similar to that of cumulus clouds, so that a "cloud" content response would be more likely to it than to some of the other cards. In fact, any texture response is likely to be making use of such physiognomic properties, like the "fur" or "rug" responses to Cards IV or VI. The perception of movement, as Arnheim has suggested (2), may also be a direct response to certain stimulus characteristics, certain figural tensions or "visual dynamics"; "visual forms are striving in certain directions. They contain directed tensions." Sensitivity to these emergent qualities may produce the movement response. Further, just as in the TAT, certain percepts, perhaps operationally definable as the popular responses, seem more congruent with certain cards than others; each card, by its structure, leads to certain percepts congruent with it.

Early gestalt theorists made much of what they called dependent part qualities (e.g., 35, 36, 58): the appearance of a part depends upon its place, function, and relation in the whole of which it is a part. Differing parts of the Rorschach blot look different at different times, depending on the total organization of the blot. Such factors have been discussed by Beck (4) and by Arnheim (2, 3, 32), among others, in relation to the Rorschach.

Classical studies of the perception of color are not as clearly relevant to the Rorschach. However, certain

studies in experimental aesthetics (e.g., 43) add some insights into the use of color in the Rorschach. Warner (55) found that anxiety is related to preference for lighter colors; perhaps this may account for shading shock, shock on card IV, and the like. There are also some data on color preferences (e.g. 21) which might be useful in the analysis of Rorschach protocols: if certain colors are used relatively more extensively than others, this might indicate certain psychological correlates. Thus Goldstein (19, 20) argues that red and yellow are frequently seen as "expansive" while blue and green are seen as "contractive"; others (e.g., 25, 39, see also 40) have argued that red is happy, warm, and exciting, while blue and green are serene, sad, and cool. Further, use of color could be indicative of maturational level, in that yellow seems to be preferred by the pre-school child, while blue is preferred by grade school children (43).

Before leaving the area of autochthonous factors, one must mention that the subject of course responds not to the blots or cards alone, but to the entire situation within which he finds himself, including the room, the examiner and his manner, the circumstances leading up to his taking of the test, and the like. Thus, among other things, the subject's perception of the examiner and of the subject's relation to the examiner will also affect the responses he produces (cf 17, 24, 44).

INTRA-INDIVIDUAL PRINCIPLES OF PERCEPTUAL ORGANIZATION AND THE RORSCHACH

Aside from the autochthonous factors in the stimuli themselves, the principles of organization involving characteristics within the perceiver are operative — such principles as set, motivation, and past experience. In fact, as Sir Cyril (13) has pointed out, there could be no content without reference to *past experience*. For example, the top center detail on Card

X could not be called the Eiffel tower if the subject had not previously heard of the tower or seen it or pictures of it; the same analysis can be made of the content of any other response. *Set* may play a role in such phenomena, among others, as perseveration; if the subject has seen the first few cards as X-rays, he may have a set for the remaining cards which increases the likelihood of more X-ray responses. Or one might assume that a person who feels constantly watched would be more set to see people looking at him, or eyes, in the blots (e.g., 46; but see 59). *Motivation* may play a role; for example, if a subject is hungry, or has a strong orientation to food, he might be more likely to see food objects, or other food-related content, as suggested, among others, by McClelland and Atkinson (41). Whether such studies are truly "perceptual" or not — that is, whether some judgmental factor may not enter in, so that perhaps they should be called "apperceptual" — is really irrelevant, since the same question can be raised about the Rorschach itself. Is a Rorschach response a response to a perception or to an apperception?

It is in this last area, of the influence of such factors as motivation, personal values, and the like, that much of the recent research in perception has centered (e.g., 7, 11, 12, 33, 38, 47, 61); most of these "new look" studies have been concerned with the influence of intrapsychic variables on the perception of ambiguous stimulus situations. It is of course just such factors which are the Rorschach worker's chief concern; it is assumed that through his perceptual responses, the subject's personality structure is laid bare. Bruner (e.g. 10, 11) and others (e.g. 47) have tried to arrive at a formulation of the influence of such factors; one of the most widely accepted seems to be that their influence on the percept is a direct function of the strength of these factors and an inverse function of the structural strength of the autochthonous factors

in the stimulus. That is, the stronger a given motivation or set, the more likely is the person to see things as consistent with that set; but the stronger the structural articulation of the stimulus material, the less likely is the subject's motivation or set to influence the percept. One might perhaps phrase it this way: the autochthonous factors set the limits of what a given stimulus can be perceived as (— certain cards are by nature of the stimulus structure more likely to produce certain kinds of content, such as the popular responses —), while the personality factors determine where within these limits the actual percept falls. From this it follows that with more ambiguous material, a greater influence of the personality factors can be expected. In cases of extreme personality disorganization, such as functional psychoses, the distorting influence of intrapsychic factors may be very great; in the case of certain organics, as suggested by Gelb and Goldstein (16), responsiveness to the autochthonous factors may be so impaired that they no longer function adequately: that is, perceptual distortions in psychosis may be greater because of either a strengthening of motivational determinants or a weakening of structural determinants, or both.

The Rorschach blots are indeed ambiguous, at least for the examiner, in the sense that the stimulus material is perceptually unstable; the stimulus complex and the autochthonous factors, as mentioned above, permit many equally or almost equally "prägnant" organizations, and hence leave room for the operation of factors within the individual. Strictly speaking, then, it is not correct to consider the Rorschach card "unstructured" (e.g., 50); rather, it is a multiple reversible figure, with many possible alternative organizations. Under such circumstances, one would expect from the Bruner kind of formulation that the personality factors will contribute rather heavily to the total variance,

and that therefore the Rorschach is admirably suited to its task (cf 34).

But there is a disadvantage here also, since the Rorschach analyst makes more use of the recent new look type of approach which concerns itself with personality-conditioned individual differences in perception than of the more solidly based traditional autochthonous principles of perception. For even though there has recently been a major research attack on these intrapsychic determinants, the intensive research in the area of factors within the individual contributing to perceptual organization is so new that there is not yet as great a backlog of experimentally established and validated knowledge as one would like. Perhaps this is one of the reasons why there seems to be so much difficulty about the validity of the Rorschach (e.g., 29, 31): much Rorschach interpretation is essentially based on perceptual principles which have not yet been sufficiently explored experimentally. Perhaps once the research literature on the influence of personality factors on perception has grown enough, the Rorschach analyst will be able to base his interpretations more on solid experimental fact, rather than on clinical intuition alone (cf. 42). At the present time he can do little more than use intuition, since so many of the important laws in the area have yet to be discovered and empirically verified.

A further issue is raised by such an analysis. Are the current Rorschach blots the best that can be devised for the purpose? Should one perhaps try a systematic variation of the structuredness of the cards, such as from a black square on a white ground to a totally amorphous rainbow blot with the colors swimming into each other without clear contours? With such a set of cards one might be able to discover how weak the autochthonous factors need to be before the influence of the intrapsychic factors is clearly apparent. How about a systematic variation in the use of color? And

many other possibilities. (Both Holtzman's (28) and Howard's (30) modifications might potentially be considered efforts in this direction.)

SOME DIFFERENCES BETWEEN THE RORSCHACH EXPERT AND THE PERCEPTUAL RESEARCHER

Of course the Rorschach worker can and does contribute to the area of the influence of personality on perception; yet there are some fundamental differences in the way the laboratory perception psychologist and the Rorschach worker go about their business. On a theoretical level, generally the experimentalist begins with a hypothesis or a theoretical system, and manipulates certain independent variables in order to see their effect on a dependent variable: he predicts from the independent to the dependent variable. The Rorschach worker, on the other hand, must use the responses of the subject in order to try to build up a picture of his personality; essentially, he goes from the dependent variable to the independent, making inferences from the performance back to the determiners of the performance. Although there is much room for discussion of the relative merits of these two methods of induction, in general the perceptual psychologist works within a hypothetico-deductive framework while the Rorschach worker does not do so as clearly. There are Rorschach analysts (46) who try to use a hypothetico-deductive system, but the entire system must remain within the confines of a single Rorschach protocol. Certain responses suggest certain probable antecedent conditions or characteristics of the subject, and then these conditions are tested as hypotheses by seeing whether the other responses are consistent with them. But, unfortunately, it generally becomes a matter of post hoc explanation rather than true prediction; usually the analyst cannot predict on the basis of a picture built from the responses on Card I just what the responses on Card VII will

be; rather, he builds up his picture from Card I and then sees whether the responses on Card VII are consistent or inconsistent with the formulation he derived from Card I.

Second, the Rorschach worker seems one step further removed from the actual data than does the laboratory perception psychologist. While the experimentalist presents a stimulus and then records the subject's discriminations or interpretations, the Rorschach worker essentially interprets the subject's discriminations or interpretations. That is, the experimentalist's conclusions are interpretations, while the Rorschach worker's conclusions are interpretations of interpretations, and hence leave more room for error to creep in.

A third difference between most contemporary perceptual work and that of the Rorschach analyst is that, in this respect, the Rorschach worker is back where the perception psychologist was about thirty years ago. The Rorschach worker essentially makes use of phenomenology (9), while most perceptual work nowadays requires nothing more than a single discriminative response, such as pushing a button or saying "yes" or "no". This is not to say that no contemporary perception worker makes use of phenomenology — far from it — but rather to say that certain precisions have been developed in perceptual work which have no counterpart in Rorschach work: the Rorschach analyst, whether he likes it or not, is essentially limited to the phenomenological method. There is one exception to this, the multiple-choice Rorschach (22), in which the subject behaves much like a subject in a psychophysical experiment, but many Rorschach workers feel that this method inevitably gives less information than a full individual protocol.

One final difference between the perception experimentalist and the Rorschach worker is the difference between the laboratory research worker and the clinician: the former aims

at uncovering general principles that apply to people in general, while the latter's task is to discover as much about the particular person before him as possible. The experimentalist is usually interested in predictions about groups, with the attendant precision, while the clinician is interested in predictions about the individual, with the attendant difficulties about precision and validity. This entire area of the experimentalist "attitude" as against the clinical "attitude" deserves a great deal of discussion, and is very much in the air currently (e.g. 27, 40, 54), as it has been for a long time; for present purposes perhaps it will suffice just to mention some of the issues involved. Where the experimentalist tends towards "tough-mindedness" and objectivity, trying to divorce himself as much as possible from his data, the clinician seems to tend more toward "tender-mindedness" and subjectivity, using himself and his own impressions of the person before him as devices for achieving understanding. There seems also a basic difference in the value weighting of precision as against understanding; partly because of this, one might call the experimentalist "technique-centered" while the clinician might be considered more "problem-centered." Finally, there is the very difficult question of attitude towards the validity of clinical techniques and intuitions, (e.g. 15, 29, 31, 42): such issues as whether projective techniques, and specifically the Rorschach and TAT, have sufficient validity to warrant any use of them at all, whether psychotherapy is useful or not, and the like.

FURTHER REMARKS ABOUT THE RORSCHACH AS A RESEARCH TOOL IN THE PSYCHOLOGY OF PERCEPTION

As many examples in the foregoing discussion have already indicated, there are many ways in which the clinical and the experimentalist "attitudes" can be fused in work with the Rorschach and other projective devices, like the Blacky (8). The Ror-

schach has, in recent years, been used as a tool for the study of more general perceptual principles, such as figure-ground contrast and its influence on perception (5), the development of perception (e.g., 14, 23, 45, 62), and the like. One can only hope that this kind of research will continue. Not only is there much promise in the study of personality determinants of perception or conception via the Rorschach (cf. 8), but basic general principles of the relative influence of structural and intra-personal factors in the determination of perception could be arrived at. Tachistoscopic research can shed light on closure phenomena, and perhaps an information-theory approach (e.g., 1, 26) to tachistoscopic Rorschach perception might be fruitful.

SUMMARY

The applicability of principles, derived from perceptual research and theory, to the Rorschach was indicated both for the more traditional autochthonous factors and especially for the recent "new look" approach. Some research directions are suggested, including the further use of the Rorschach in basic perceptual research, and the design of Rorschach-type stimuli which might be more likely, on the basis of perceptual principles, to elicit the type of information desired about a patient. Although there seem to be some rather basic incompatibilities between the Rorschach "attitude" and the experimentalist "attitude", both sides could profit from greater interpenetration of perceptual research and Rorschach study.

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BOOK REVIEW

Small, Leonard. *Rorschach Location and Scoring Manual.* New York and London: Grune and Stratton, 1956, pp. 214.

This volume contains a one-half page introduction, two pages of instructions, and a location chart for each Rorschach card. It is stated in the Introduction that there are "more than 6000 responses scored by Beck and 17 other Rorschach workers." Actually, as explained later, all scoring has been converted to the Beck system; and the scoring of the seventeen other Rorschach workers has been omitted. Offered as a "manual . . . designed to expedite Rorschach scoring," the claim is made that the "6000 responses are scored for area, determinant and content" (Introduction). However, the "responses" in themselves consist in most instances of very few words indicating the *content* of the response (e.g. "Bear," "Head, beaver's"), and in most instances not enough information is given for any confident scoring of determinants. Very few responses contain the information that is usually obtained by adequate inquiry. Furthermore, while the name of the author originally publishing the response is indicated by an abbreviation system in each case, the reference is not given, rendering it difficult, if not impossible, to seek more information from the original source.

Scoring for location and content, both of which are satisfactorily taken care of in this manual, usually give the Rorschach student little trouble. On the other hand, scoring for determinants and the technique of obtaining adequate information through proper inquiry in order to score are among the most difficult tasks the student faces. Thus, not only does this manual fail to accomplish what it claims to do, but also it fails in some of the most necessary and complicated aspects of training in the Rorschach technique.

In the Introduction the student is "cautioned against using this manual to score responses in a mechanical and rigid manner." This is a well-taken warning, and yet the scoring of responses which contain as little information as many of these do is likely to encourage the rigid, mechanical approach that the author warns against. Per-

haps the author has left it to the course instructor to guard against the misuse of this manual; however, any good manual should have built into it as many as possible of the proper precautions for use of its contents and not depend upon the good judgment or conscience of others to supply the necessary safeguards.

The locations for the responses are delineated on the charts in solid black, making them easily seen; but the reader is left to guess at how the subject actually saw the concept. That is, parts of a concept—such as head, arms, legs and so on—are not indicated; and an inexperienced student could thus fall into the error of assuming that all subjects giving the same content to a certain blot area perceive the content in the same way—or as the student himself perceives it. The importance of determining just how the response is perceived is thus neglected in this manual.

The vast number of responses listed in this volume have been sorted according to card and location only, and no information about the subjects giving the responses is offered. Neither has any attempt been made to separate responses according to sex, age, intelligence, diagnosis or any other category. While such information is not necessary for scoring, such a use of the kind of material contained in this book might have been of far greater value than its present designated purpose of a scoring manual.

From the standpoint of format, this is a handsome volume. The contents are well-arranged, and it is thumb-indexed for easy access to the material about the different blots. Any real usefulness for the book other than to satisfy curiosity about diversity of content of responses to specific blot locations escapes this reviewer. The limitations referred to above, particularly in respect to adequacy of specification of responses, reference sources and information regarding the subjects who gave them, greatly attenuate its value in doing what a good Rorschach scoring manual needs to do.

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GENERAL NEWSLETTER

Buffard, S. Le Rorschach au cours de lombagos chroniques. *Bull. du groupem. Franc. du Rorschach*, 1956, 8, 3-9.

Rorschach and Rosenzweig P-F findings are presented for a sample of 19 cases of backache.

Canivet, N. Introduction a une discussion sur les contenus dans le Rorschach. *Bull. du Groupem. Franc. du Rorschach*, 1956, 8, 11-17.

An interpretive and statistical summary of Rorschach content. 33

Cotte, S. Etude statistique sur les responses anthropomorphiques (H) dans le test de Rorschach des enfants impuberes (de 7 a 11 ans). *Bull. du Groupem. Franc. du Rorschach*, 1956, 8, 19-22.

The incidence of human percepts in each of the 10 Rorschach blots are presented for boy and girls at yearly intervals from age seven to eleven.

Courtial, A. Resultats du Rorschach sur un groupe de 60 ingenieurs. *Bull. du Groupem. Franc. du Rorschach*, 1956, 8, 23-29.

Rorschach data of a group of 60 engineers reveal a number of significant and characteristic personality features.

Sal Y Rosas, F. Remarques sur la position des zones de response dans le test de Rorschach. *Bull. du Groupem. Franc. du Rorschach*, 1956, 8, 30-32.

Responses from 2000 Rorschach protocols are used to describe newly conceived aspects of locations of responses: peripheral, central, lateral, top, bottom, etc. Sex differences are described.

Schachter, M. and Cotte, S. Contribution a l'etude du test de Rorschach chez des enfants de deux a six ans. *Anais Portugueses de Psiquiatria*, 1955, 7, 1-20.

Rorschach findings in a sample of 78 children of average intelligence are presented. Age groups for which statistical data are presented are: 2 to 5, 5 to 6, and 6 to 7.

Kadinsky, David. Zum Problem der Bewegungsdeutungen im Rorschach.

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An experimental study of form and movement perception in terms of a theory of perceptual differentiation.

Hagenbuchner, K. and Thurner, F. Uber die Brauchbarkeit des Diapositiv-Z-Tests (Gruppenverfahren) in der klinischen Psychiatrie. *Zeitschr. f. diagnost. Psychol.*, 1956, 4, 331-343.

An attempt to validate the group administration of the Z-Test against the criterion of psychiatric diagnosis.

Kreusch Erdman and Spreen, Otfried. Uber einen Fall von Homosexualitat, angeblich durch ein Zwischenhirntrauma verursacht. *Zeitschr. f. diagnost. Psychol.*, 1956, 4, 343-359.

A case study of homosexuality is presented to show the value of a diagnostic battery in forensic matters.

Torok, Maria. L'Interpretation kinesthetique au Rorschach et sa valeur psychognomique chez l'enfant de 5 a 6 ans. *Zeitschr. f. diagnost. Psychol.*, 1956, 4, 370-379. (Rorschachiana).

Analysis of variance is used with the Rorschach to determine the differential effects of varied kinds of education on children's psychologic development.

Kos, M., Munari, I., and Spiel, W. A propos d'un cas de vol chez l'enfant. *Rassegna di Psicologia generale e clinica*, 1956, 1, 16-36. (Palermo).

Drawing techniques were used in the psychotherapy of a gifted 10-year-old boy referred for repeated thefts.

de Grada, Eraldo. Contributo metodologico alla validazione delle tecniche proiettive "controllate". *Rassegna di Psicologia generale e clinica*, 1956, 1, 48-72. (Palermo).

A theoretic discussion of problems of validation and prediction in projective psychology. The author suggests prediction of projective from overt behavior as a research method.

Riccobono, Liliana and Morante,

Lidia. Risultati di un primo sondaggio con test "Mosaico" di Gille sulla popolazione scolastica del città e della provincia de Palermo. *Rassegna di Psicologia generale e clinica*, 1956, 1, 73-100. (Palermo).

Gille's Mosaic Test was administered to a large sample of school boys in an effort to determine the relative effects of age and environment.

Ponzo, Ezio. Il problema del livello di coscienza nell'uso dei metodi proiettivi: indagine su una ipotetica tecnica di controllo del valore soggettivo delle attribuzioni di significato al test di Rorschach. *Rassegna di Psicologia generale e clinica*, 1956, 1, 116-122. (Palermo).

Drawing is used as an adjunct to Rorschach inquiry.

Roemer, Georg A. El Test Central. *Revista de Psicologia general y aplicada*, 1956, 11, 429-462. (Madrid).

A discussion of the various facets of the Rorschach.

Minicucci, Agostinho. Ambivalência, o adolescente, a grafologia e o Psicodiagnostico Miocinetico. *Arquivos Brasileiros de psicotecnica*, 1956, 8, 11-14.

Low individual reliability of Myokinetic

records coincides with ambivalence as manifested in handwriting analysis.

Zulliger, Hans. Un cas de pseudo-débilité. *Rev. de Psychol. Appliq.*, 1956, 6, 161-177.

The Rorschach, Z-Test, Tree Test, and Düss Fables are discussed in this case study of a pseudo-defective.

Schachter, M. and Cotte, S. Contribution à l'étude du rôle des facteurs âge et sexe dans le Rorschach des enfants de 12 à 16 ans. *Etudes de Neuro-psycho-pathologie infantile*, 1957, 7, 29-70.

The authors present numerous tables summarizing Rorschach differences between boys and girls at yearly intervals from 12 to 16. Samples are rather small. Developmental changes and sex differences are discussed.

Cotte, S. Etude psychologique de filles mineures, célibataires enceintes ou mères vues à la lumière du test de Rorschach (60 cas). *Etudes de Neuro-psycho-pathologie infantile*, 1957, 7, 71-115.

Rorschachs and Goodenough human figure drawings were administered to samples of 40 pregnant single girls from ages 13 to 20 and 20 unmarried mothers from 15 to 20. A few case studies are presented and tabulations of Rorschach data with comparable samples of adolescent girls: married, single, and prostitutes.

ANNOUNCEMENTS

WORKSHOPS

1957 WORKSHOP IN THE RORSCHACH TECHNIQUE OF PERSONALITY DIAGNOSIS AND OTHER PRO- JECTIVE TECHNIQUES AS USED WITH CHILDREN

Jointly sponsored by
Claremont Summer Session and
Children's Hospital, Los Angeles
Directed by BRUNO KLOPFER

September 4-13

Children's Hospital, Los Angeles

The Workshop will be devoted to the study of projective techniques as used with children. Planned for professional people who are competent in the basic use of the Rorschach test, an opportunity will be given to examine and discuss the test protocols of normal children and of children presenting various types of disorders.

Staff Members: Helen Alden Klein, M.A., Psychiatric Social Worker, Children's Hospital; Bruno Klopfer, Ph.D., Clinical Professor of Psychology, University of California at Los Angeles; L. LaVergne Letson, M.A., Psychologist, Psychiatric Service, Children's Hospital; Evelyn Newman, Psychiatric Social Worker, M.S.W. Children's Hospital; Edwin S. Shneidman, Ph.D., Chief for Research, Psychology Service, V.A. Neuro-psychiatric Hospital, Los Angeles, and Clinical Associate, U.S.C.; Joseph D. Teicher, M.D., Chief of Psychiatric Services, Children's Hospital, Associate Professor of Psychiatry, U.S.C.; Helmut Wursten, Ph.D., Chief Clinical Psychologist, Psychiatric Service, Children's Hospital and Clinical Associate, U.S.C.

Program: (The number of two-hour sessions is indicated after each course):

- A. Introductory and Survey Lectures (11);
- B. Intermediate Seminar in Rorschach Administration, Scoring and Basic Interpretation (5);
- C. Case Study Seminar, including case history analysis, psychometric material and other projective material, especially TAT (10);
- D. Thematic Test Analysis (4).

Tuition: \$50.00.

Lecture Series. In conjunction with the Workshop, the Psychiatric Clinic of Children's Hospital offers a series of free lectures, to which Workshop participants and other professional workers are invited. These lectures (with discussion) will be offered at

4:00 p.m. Discussion of the following topics is planned:

Children's Rorschach Records as a Contribution in the Psychological Test Battery.

Learning Difficulties in Children: Diagnosis and Treatment.

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Psychosexual Pathology: Diagnostic Problems.

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Claremont Summer Session Credit. Qualified graduate students accepted for the Workshop may register for 2 units of credit (Psychology 243 or 244 a. b. c.).

All students wishing to qualify for graduate credit must apply to the Claremont Summer Session, Claremont, California, for the necessary forms before August 1, after they have been notified of admission to the Workshop. The Claremont Session is fully approved for study under Public Law 346 and 550 and under State Aid.

Prerequisites for Admission. Psychologists applying for admission to the Workshop are expected to fulfill the following prerequisites:

1. At least second-year graduate standing in a recognized graduate department of psychology. The academic background should include the successful completion of such basic courses as general, abnormal and clinical psychology, personality tests, measurements and statistics.
2. At least one full year (or its equivalent) of professional experience, preferably in the field of clinical psychology.

Other professional persons eligible for training in the use of projective techniques, including psychiatrists, psychiatric social workers, sociologists and anthropologists, are admitted on an individual basis.

Admission to the Workshop on the basis of the application, without a special appli-

cation for graduate credit, entitles the applicant to full participation and to registration as an auditor in the Claremont Summer Session.

Living Accommodations. A list of available living accommodations near Children's Hospital will be mailed on request by the Psychiatric Clinic, Children's Hospital, 4614 Sunset Boulevard, Los Angeles 27, Calif.

Applications. To apply for admission to the Workshop, write to DR. BRUNO KLOPFER, P. O. BOX 2971, CARMEL, CALIFORNIA, before June 15, 1957.

The 1957 Annual Workshop in Projective Drawings will be conducted in New York City by Emanuel F. Hammer and Selma Landisberg on August 5-8. In addition to Buck's H-T-P technique and Machover's Draw-A-Person Test, the workshop will include the Draw-A-Family procedure, Harrower's Unpleasant Concept Test, the Drawing Completion Test, the Draw-A-Person-in-the-Rain modification of Abrams which attempts to elicit clues to the self-concept under conditions simulating environmental stress, Schwartz's Draw-An-Animal concept — useful for disclosing the biological side of the bio-social coin, Calligor's Eight-Card Drawing Test which frequently uncovers the deepest layers of the subject's psychosexual identification, and free doodles.

Write Miss Landisberg, 204 West 88th Street, N.Y.C., for further information, admission requirements, and application blanks.

The Applied Psychology Centre of McGill University announces a seminar on Recent Advances in Psychodiagnostic Theory and Practice to be held at McGill University, May 20-24, 1957.

The Seminar is primarily intended for clinical psychologists, psychiatrists and others professionally interested in the theory and practice of psychodiagnosis. Each day will be devoted to a different topic. There will be two formal presentations per day the balance of the time being spent in group discussions in which the speaker who introduced the topic will act as resource person.

The aim of the seminar is to provide an opportunity for clinical workers to participate with others in the informal discussion of significant recent developments in clinical psychology, psychiatry and allied disciplines.

PROGRAMME

May 20 a.m. "The re-evaluation of the

basic science foundations of psychodiagnosis." Speaker: Frederick C. Thorne, M.D., Ph.D. Editor, Journal of Clinical Psychology, Brandon, Vt.

May 20 p.m. "A critique of current practices in psychodiagnosis." Speaker: As above.

May 21 a.m. "Projective test derivatives: I. The Verdun Association List." Speaker: Herbert Dorken, Jr., Ph.D. Consultant in Psychology, Department of National Health and Welfare, Ottawa.

May 21 p.m. "Projective test derivatives: II. The Differential Diagnostic Technique." Speaker: S. L. North, Ph.D. Clinic for Psychological Medicine, Hamilton, Ontario.

May 22 a.m. "Personality theory based on objective tests." Speaker: Ernest G. Poser, Ph.D. Department of Psychology, McGill University.

May 22 p.m. "Sedation threshold as a psychodiagnostic technique." Speaker: Charles Shagass, M.S., M.D. Allan Memorial Institute, Montreal.

May 23 a.m. "Perception and personality." Speaker: D. O. Hebb, Ph.D. Department of Psychology, McGill University, Montreal.

May 23 p.m. "Perceptual tests in psychodiagnosis." Speaker: Heinz Lehmann, M.D. Clinical Director, Verdun Protestant Hospital, Montreal.

May 24 a.m. "Social Psychological Orientations of Relevance to the Clinician." Speaker: Wallace E. Lambert, Ph.D. Department of Psychology, McGill University, Montreal.

May 24 p.m. "Diagnostic Formulations by the Clinical Team." Speaker: James Tyhurst, M.D. Allan Memorial Institute, Montreal.

Participants are expected to have had some graduate work in the clinical field and at least a summer internship in an applied setting.

The fee for this Seminar will be \$40.00 per person. Lodging may be obtained in the University residences at approximately \$5.00 per day.

Those wishing to attend should send a brief statement describing their academic qualifications, present position and clinical experience to:

E. G. POSER, APPLIED PSYCHOLOGY CENTRE, MCGILL UNIVERSITY, MONTREAL, QUEBEC.

Applications, accompanied by a deposit of \$10, made payable to McGill University, should be received by April 30. Applicants will please indicate whether they wish accommodation in residence.

PUBLICATIONS

American Board for Psychological Services, Inc., 9827 Clayton Road, St. Louis 17, Missouri.

Directory of American Psychological Services, 1957 \$1.00

An ever-increasing proportion of the public has been turning to psychology for help. Sometimes, it is for help in diagnosing and treating a child who is under medical care; at other times, it is for help in evaluation of men considered for positions in industry. Sometimes, people go to psychologists for counseling on normal personal problems, while at others they seek psychological aid in constructing all sorts of human tools from tests to instrument panels in airplanes. Until the publication of this directory, there has been no single source of information to which everyone may turn for a list of agencies and individuals, in the United States and Canada, who are thoroughly competent by education, training and experience to give the public its money's worth in the variety of services offered.

Most states do not yet tell their citizens through licensing or certification boards how to tell a competent, ethical psychologist from a fortune teller or equally unqualified persons who trade on the public's gullibility and inability to distinguish between the professional psychologist and the quack. This directory represents an effort by the science and profession of psychology to supply the public with a source book or guide to which it may turn for help in seeking the services of qualified psychologists in the near vicinity. The directory represents the work of a small Board of five psychologists appointed in 1954 by the American Psychological Association on the basis of their breadth of knowledge and experience to fellow psychologists who, in turn, applied to them for inclusion in this directory.

The directory is the fruit of thousands of hours of unpaid time given by psychologists who have assisted the Board in its work of visiting agencies and psychologists who, themselves, have paid part of the monetary expenses of the Board through examination fees even though it is not expected that the directory will result in any financial gain to them. Competent psychologists who serve the public are already as busy as they can be.

This directory is a small beginning. It contains the names of over one hundred agencies and/or individuals to whom the public may turn with confidence. Some of

the agencies are psychiatric clinics or medical institutions which offer psychological services through experienced staff members. Some agencies practice what is generally called industrial psychology because they offer a variety of services to business and industry. The individuals listed include both clinical and industrial psychologists. The directory is representative of the geographic distribution of American Psychologists; many more are listed on the East and West Coasts than in the great middle area of the continent, but population densities are also distributed in this way.

The Board which published the directory make very clear in their preface that the list is not by any means to be considered as a complete list of all psychologists or agencies which are well qualified and competent to give psychological services. Many excellent psychologists did not apply for evaluation and listing; it is hoped that they will join their fellows in this public service and be found listed in future directories. The absence of any particular name from this directory, then, is more likely to mean that application was not made for inclusion than that the particular person or agency was turned down by the Board as failing to meet its high standards.

The Journal of Individual Psychology, a publication of the American Society of Adlerian Psychology, Inc., formerly known as The American Journal of Individual Psychology, has broadened its editorial policy. According to the new policy, the journal is seen as the medium of expression of those in psychology and related fields who are interested in a holistic, teleological, phenomenological, and socially oriented approach, based on the assumptions of an active creative self, an open dynamic system of motivation, and an innate potentiality for social living.

The journal invites theoretical and research papers, and clinical and other practical contributions, as well as informal notes and letters, which fall within the scope indicated above.

The May issue, the first under the new policy, contains papers by Hadley Cantril, Albert Ellis, Ruth Hartley, Clark Moustakas, and Edmund Sinnott, among others, and a heretofore untranslated paper by Alfred Adler, dated 1937, the year of his death.

Requests for sample copies and all other communications are to be addressed to Dr. H. L. Ansbacher, Editor, University of Vermont, Burlington, Vermont.

SPECIAL BACK VOLUME OFFER

Because of the demand for earlier out-of-print volumes of the Journal of Projective Techniques, a limited number have been reprinted* We are now in a position to make the following specially-priced offer.

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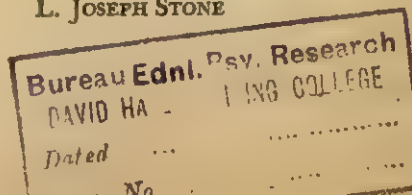
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The Clinical and Scientific Methods: Synthesis or Antithesis?¹

JULES D. HOLZBERG
Connecticut State Hospital

After close to two decades of functioning as a clinical psychologist, a period that should be sufficient to have brought one through the development of one's professional self-concept, I must confess that I find myself still puzzled by the question, "What am I?", realizing only too well that confessions may be good for the soul but bad for one's reputation. To some the clinician is an artist, an artist who hides behind a scientific facade, who is blind to scientifically relevant facts, who responds with faith rather than with evidence. Still others see him as a scientist of the highest creative order, weaving individual personality theories, which may be at the rate of one to five per week. As if this has not been enough to provide confusion, it has now even been suggested that the clinician behave like a "cook" armed with a cook book (18), which seems to be no solution either, since has it not been said, "Cookery has become an art, a noble science?" The clinical method, like the clinician, has also been subjected to a battery of adjectival descriptions which are no less divergent:

"The clinical method ... is labeled by its proponents as dynamic, global, meaningful, holistic, subtle, sympathetic, configural, patterned, organized, rich, deep, genuine, sensitive, sophisticated, real, living, concrete, natural, true to life, and understanding. The critics of the clinical method are likely to view it as mystical, transcendent, metaphysical, supermundane, vague, hazy, subjective, unscientific, unreliable, crude, private, unverifiable, qualitative, primitive, prescientific, sloppy, uncontrolled, careless, verbalistic, intuitive, and muddle headed." (17, p. 4-5).

This controversy has led me to consider the question, "What is the

clinician?" and I have sought for the answer in what it is that the clinician does—the process of clinical inquiry. My focus has been on the clinician as a psychodiagnostician rather than as a therapist or as a researcher for the confusion I have described emerges from the contemporary controversy concerning what the clinician is as a diagnostician. Since projective techniques constitute the heart of contemporary clinical diagnostic practice, my search for clarity of professional self-concept seems relevant to those of us who have joined together in a common interest in projective methods. I am limiting myself to clinical diagnosis in the psychiatric setting which has been my primary experience and represents the contemporary accepted pattern of multi-disciplinary collaboration in clinical diagnosis. I have sought clarification to the question in an introspective examination of my own performance as a clinical diagnostician and in my observations of psychology interns whom I have had an opportunity to observe over the years. I feel that interns can especially contribute much to our understanding of this problem for it is in the embryo psychologist that one can observe most clearly aspects of the clinical process that may be more difficult to unravel in the more mature professional clinician with his highly developed professional defenses.

The process of clinical inquiry has often been thought of as a specific method of problem solving that could describe all clinicians' behavior, concerning the nature of which there would be general agreement. In actuality, is there such a thing as *the* clinical method, or are there a variety of clinical methods many of which differ only in the degree to which certain aspects are emphasized, yet by this

¹ Presidential address delivered at annual meeting of Society for Projective Techniques, September 1, 1956, Chicago, Ill.

very difference in emphasis produce different methods in much the same way that we speak of unique differences in personality based on quantitative differences in personality variables?

As I view it, clinical inquiry consists of a series of interrelated activities which do not follow a prescribed sequence but rather overlap considerably. Recognizing the risk in so doing, I have nevertheless attempted to dissect the process of clinical inquiry in the belief that this will facilitate the solution to the problem of what the clinician is. I have isolated ten activities or variables which I believe to be pertinent to clinical inquiry.

THE VARIABLES OF CLINICAL INQUIRY

If one looks upon clinical performance as imbedded in a process of communication, it is the referral problem or question which initiates the communication process and leads ultimately to a communication, either a written or oral psychological report. The first activity relevant to understanding the process of clinical inquiry is the extent to which the clinician accepts the referral problem as the focal problem. Here, we may observe two sharply differing attitudes. One attitude is that of focusing on the referral problem, to the exclusion of other conceivable problems relative to the patient. The second attitude accepts the referral problem as but one of a series of questions that may ultimately be pertinent to the patient. Here the emphasis is on broad personality study that will ultimately lead not only to the answer to the specific referral question but to others that may become relevant. I believe that differences in this factor of the clinician's attitude toward the referral question is basic, in that this attitude will affect the other variables in the clinical process.

In the type of professional setting that I have earlier described, the questions that are presented to the diagnostic clinician emerge primarily from

other professional disciplines. For the most part, these questions are posed in terms of those variables pertinent to the professional discipline involved, e.g., psychiatry or social work. This leads to the second factor in clinical inquiry—the reformulation of the referral question into the variables of psychology. Here again we may observe differences in the way the same question may be reformulated. These differences will be a function of the focal or non-focal attitude I have just described and of varied theoretical orientations and the differences in significance of variables which these orientations presume.

A third activity in the process of clinical inquiry is the selection of techniques which are capable of illuminating the psychological variables with which the clinician is concerned. Here again one may note differences in the types of techniques used — from techniques of specific variables to those of multiple variables, from techniques that yield scores to those that yield not-readily quantifiable data. There may be a single technique or a battery of techniques, standard batteries or flexible batteries.

The unique character of the clinical process is that it involves an interaction between two individuals, and it is this interactional process that I consider a fourth factor in clinical inquiry. Here one may note again differences in attitude toward the importance of this factor in determining the nature of data elicited and differences in the way knowledge of this interactional process is used in clinical understanding. Attitudes toward the importance of this factor range from that of complete indifference to it to insistence that no data can be analyzed validly outside such a frame of reference. Differences in the use of knowledge emerging from the effects of the interactional process are principally due to lack of understanding of how different relationships affect clinical data and what

these effects mean in terms of patient understanding.

From the point at which contact with the patient begins, the clinician has begun his process of data collection, the fifth variable in the process of clinical inquiry. There are multitudes of data in the clinical situation but each clinician operates within a perceptual frame of reference that permits selection of certain observations and not others, depending on his theoretical orientation, the psychological variables relevant to the formulation of the problem and the clinician's own defensive orientation to reality. Here again are differences in another facet of the clinical process.

Both clinician and non-clinician agree, whatever else their differences, that the clinician is a vital variable in the clinical process. As Schafer has said, "No matter how helpful a clinical tool it may be, a psychological test cannot do its own thinking" (27, p. xi). But even prior to the process of interpretation, while the clinical tool may elicit observations, only the examiner can select them in terms of pertinence to the goal of the investigation. I have therefore considered him the sixth variable in the process of clinical inquiry. No special emphasis is needed to stress the differences in clinical performance resulting from differences in clinicians—differences in receptivity, integrative capacity, flexibility, capacity to benefit from experience, to name but a few.

The heart of the process of clinical inquiry is interpretation, the seventh factor. Here again one may note differences which may affect the final outcome of clinical inquiry. One may observe differences in modes of interpretation and levels of interpretation. Variations in modes may be noted by interpretive emphasis on authority, on subjective norms and/or psychological theory. Variations in levels are noted in interpretations limited to isolated behavior, interpretations extending to the formulations of discrete hypotheses and interpretations involving co-

ordinated hypotheses resembling in many respects a specific theory. Even in the process of hypothesis construction, one can note hypotheses evolved through a systematic inductive process, hypotheses evolved as tentative hypotheses and tested deductively with new data, and hypotheses evolved seemingly as a result of a sudden insight. Perhaps in no other facet of the process of clinical inquiry can differences be so readily detected.

The eighth variable in the process of clinical inquiry is the making of predictions. Here again are variations, of which there are at least two general types which may be clearly delineated. One of these is where the prediction is made directly from the data without an intervening process of interpretation. This most resembles the clinical actuarial or "sign" approach. Here the data are used as direct sign-posts to prediction. The other mode of prediction proceeds from the data to formulated hypotheses and then through a series of logical deductions. The predictions here are the end-products of the time-honored hypothetico-deductive process.

The ninth variable in the process of clinical inquiry is the determination of the success of predictions. This is one of the most neglected phases of the process of clinical inquiry and here too there exists wide differences in the extent to which such evaluation is conducted as part of the process of clinical inquiry and in terms of the criteria used to judge success or failure of prediction.

We began our investigation into the nature of clinical inquiry by stressing that it is embedded in a communication process which begins with the question posed by a non-psychologist and finally reaches the stage of the communication itself, i.e., the written or oral psychological report. It is this communication that constitutes the tenth variable in clinical inquiry. One need not stress the variability that exists in this process of communication, e.g., variability in terms

of clarity, comprehensiveness and usefulness.

I have briefly enumerated ten factors that I believe are variables determining the nature and quality of clinical inquiry. Perhaps I have belabored this point too extensively but I have wished to give substance to my conviction that clinical inquiry is not a unitary process except in terms of goal, i.e., understanding of the patient. Rather, there are many methods of clinical inquiry, some of which are startlingly dissimilar in their basic philosophy and conceivably in the results that they achieve.

THE NATURE OF SCIENTIFIC INQUIRY

Does this mean that it is not possible to deal with the issue of what is the clinician? Artist, scientist, cook, what have you? I believe it complicates the problem but does not render it impossible. We might begin by asking whether the facets of the clinical process that we have dissected are identical or similar to those of scientific inquiry. Actually, as you will note, they are remarkably alike. Scientific inquiry is problem-solving activity that begins with a question often naively conceived by a non-scientist which requires reformulation into the variables of the scientist performing the research. Once so reformulated, relevant techniques for the elicitation of the variables are selected and data collection is begun. Interpretations in the form of hypotheses are advanced, sometimes at the beginning of scientific inquiry, sometimes at the conclusion, sometimes during the process of scientific inquiry itself. The process of interaction between clinician and patient does not loom as significantly in, say, experimental psychology. But this may be due to the failure of experimental psychology to recognize the importance of the variable of experimenter-subject interaction. If experimental psychologists working with humans do not stress this, it is at least encouraging to note that animal psychologists

are becoming concerned with the nature of the relationships between animal and experimenter (23). Similarly, there are requisite skills and attitudes required of scientists as there are of the clinician. And, of course, scientific inquiry operates with predictions and tests their validity. Finally, scientific inquiry concludes with a communication that shares its findings with others.

Shall we therefore conclude from this that clinical inquiry and scientific inquiry are essentially identical? Some of us have reached that conclusion but I believe they are like Humpty Dumpty in *Alice in Wonderland* who says, "When I use a word it means just what I choose it to mean—neither more nor less." Scientific method is a process of problem solving with built-in provisions for maximizing validity. The success of the method has quite validly earned for it high prestige value, and it is therefore understandable that some will wish to identify with it. This however does not establish the validity of the identification.

Before proceeding with this issue, I would like to introduce to you an old friend of mine, Joe by name, who runs an auto mechanics shop in my home town. Joe advertises that he utilizes scientific methods of diagnosing the anatomical and physiological ills of motor cars. I have spoken to Joe and he is quite sincere in his belief that he is a scientist in his methods of diagnostic appraisal. I called on Joe recently to tell him my car would not go. I proceeded to describe the symptoms of my car's ills with my naive understanding of auto mechanics which Joe proceeded to translate into the variables of the car mechanic that led to three alternative hypotheses—something was wrong with my car's ignition system, the battery, or the fuel pump. Instruments were then applied to my car—instruments which I cannot describe or understand but which nevertheless were his techniques

of study and yielded both quantitative and qualitative data. Through his techniques and his careful observations of my car, his process of data collection began. It was clear that he had certain skills and personality traits that made for success in his diagnostic role so that he was a necessary part of the process of his inquiry. Inherent in his hypotheses were the predictions that he made, each prediction serving to support one of the hypotheses. Where predictions relative to one hypothesis were not supported by his study of the car, this hypothesis was discarded and at long last one of the hypotheses was supported and treatment could be begun. Lastly, he shared his findings with his associates and even recorded his diagnosis for future reference. He subsequently communicated his charges for his services, but I would suggest that this is not vital to our concern with clinical or scientific inquiry. Is Joe a scientist? He seems to behave like a scientist but I doubt that we would agree that this is his correct occupational designation.

The picture of what Joe is becomes clearer when I report that on the following day my car developed the symptom of "coughing." I observed Joe again as he proceeded to diagnose my car and to describe his behavior would be to repeat his performance of the day before. Here it became apparent that Joe's confirmed hypothesis of the day before was no longer relevant to my car's ills today. Unlike the true scientist who is involved in evolving hypotheses and eventually integrating them into a frame of theory, Joe was concerned with a narrow explanation of a specific problem and not in evolving a comprehensive theory of my car's personality. The clue therefore as to whether Joe the mechanic, Sam the tailor, or Harry the clinician is a scientist or not lies, it seems to me, in understanding their roles as theory builders in relation to their subject matter areas.

STRATEGIC HYPOTHESES VS. TACTICAL EXPLANATIONS

What is the nature of the hypotheses developed by scientists as compared to non-scientists? The hypotheses of the scientist are directed toward the ultimate development of comprehensive theories. They are open-ended in that they are capable of change and growth. They should be able not only to answer specific problems but to lead to new knowledge and understanding. They should be increasingly capable of inter-connecting facts which were otherwise disconnected. They should constitute logical next steps in the systematic development of a theory. *These are "strategic" hypotheses rather than "tactical" explanations* (20). They are not merely concerned with a specific question but a higher ordering of facts.

In this context that stresses the pertinence of the nature of hypotheses to science, can the clinician function as a scientist in his role as psychodiagnostician? Obviously he can, when his concern is the development of *strategic hypotheses* that will ultimately lead to a comprehensive theory of the individual he studies. Do all clinicians function as scientists? I believe not. Many, if not most clinicians, are not concerned with the development of *strategic hypotheses* about a patient but view their goal as the handling of a specific, more narrowly-defined problem. This lack of concern may be based on ideological differences with regard to the centrality of hypothesis-construction to science but more importantly I believe it is based on problems of time economy. Theory building is never simple, never swift. Theory building in clinical practice is costly. To truly develop *strategic hypotheses*, not only must there be time to collect data (White (34) has suggested a minimum of ten to fifteen hours in comprehensive personality study) but time to think, without which hypothesis-construction is impossible. I am

therefore stating that the clinician is capable of functioning as a scientist in his diagnostic role, but that such functioning may be more the exception than the rule. Perhaps it may be more correct to state that he strives to be the scientist he is capable of becoming but he is often unable to achieve this role because the practical nature of the clinical situation serves to restrict him.

I have attempted to stress that the nature of the hypotheses advanced determines a problem-solving method's identification with science. But, the development of *strategic hypotheses* is not science itself. It becomes part of the method of science when it is embedded in a process of inquiry that begins with a problem posed and proceeds to a communication. But I have also stressed that there is no single method of clinical inquiry. Can a model of clinical inquiry be offered which provides for the development of *strategic hypotheses* and also have built in the greatest assurance for validity of its final predictions, which after all is the ultimate goal of scientific inquiry? I believe such a model can be developed and I should like to tentatively suggest one by dealing with each of the factors of the process of clinical inquiry that I have earlier described.

A MODEL FOR CLINICAL INQUIRY

The Referral Question

The ideal model for clinical inquiry begins with the question posed as but one of a series of questions that will ultimately be pertinent to the patient. Therefore, it emphasizes broad personality description that will lead to *strategic hypotheses*.

Reformulation of Problem

This model recognizes that problems presented to the psychological clinician are in terms of variables that may be foreign to psychology. Therefore, it requires that each problem be re-formulated in terms of psychological variables. The question put to

the engineer as to whether a bridge can support a given load must be capable of translation into variables that are pertinent to his field, i.e., stress, tension, etc. I belabor this point because it has seemed to me that clinical inquiry that proceeds from the question posed by the non-psychologist without the intermediate step of reformulation into psychological variables introduces a serious type of error into clinical inquiry, i.e., conceptualizing problems in terms of variables that are not relevant to the variables of psychological theory and psychological techniques. Unless the psychologist can so transform the question that is posed, it is not a problem appropriate to his function. We must learn "it is not every question that deserves an answer," at least if the question cannot be transformed into our own variables.

It is to be expected that there will be differences between clinicians as to their reformulations of questions depending upon differences in theoretical orientations and the differences in significance of variables which these orientations presume. The problem posed, "Is the patient schizophrenic?", may be reformulated by one psychologist into "Is this a patient who shows evidence of thinking disorder?", where the theoretical orientation is principally toward a descriptive psychopathology. The same question may be reformulated by another psychologist to, "Does this patient show indications of severe ego regression?", where the psychologist conceives of schizophrenia within a framework of a psychosexual dynamic orientation. Questions that are reformulated in terms of the broadest use of practical knowledge and theory provides the most adequate beginning of clinical inquiry. As in all forms of inquiry, the question cannot be transformed by anyone except the individual who is to perform the inquiry.

I think of a question often asked of the psychologist in an institutional setting, "Is the patient ready for dis-

charge?" This question has no significance for the psychologist unless it can be transformed into a problem whose variables are meaningful to him. Thus, for the patient who is admitted because of a suicidal attempt, the question might be reformulated as, "Are the patient's self-destructive attitudes altered by his treatment or are his controls more effective in dealing with them?" For another patient who is hospitalized because, since the death of his mother, he has not had anyone to supervise his long-standing schizophrenia, such a question could be transformed into, "Are this man's ego processes such that he can be expected to function with reduced distortion of reality?" If the question, however, should become transformed into the problem, "Since this patient is unchanged in his psychopathology, can he function in another environmental setting similar to the one that was available to him when his mother was alive?", then such a question seems more appropriate for evaluation by the psychiatric social worker and would therefore not be an appropriate question to be presented to the clinical psychologist.

The problem, now reformulated, becomes the goal of the inquiry but it must be stressed that this goal may be altered by the course of the inquiry itself which may indicate the irrelevance of the original question or may demonstrate more crucial problems that need investigation. Even where the original problem may remain throughout the course of the inquiry the goal toward which the inquiry is directed, once this problem has been answered new problems may emerge for which the psychological clinician is asked for answers. The process of clinical inquiry begins with a question that is reformulated in psychological variables and is constantly concerned with a question throughout the course of the inquiry. It should be stressed that the capacity to raise questions during the course of inquiry is not one that is possessed

to the same degree by all clinicians. It has been said, "It is the work of scientific genius to be sensitive to difficulties where less gifted people pass by untroubled by doubt" (3). Clinical inquiry at its highest level requires this capacity to formulate and constantly reformulate the question or questions that guide clinical inquiry.

Selection of Techniques

The ideal model selects techniques that are capable of illuminating the psychological variables with which the study is concerned. Of single greatest importance here is the use of batteries of techniques, which perhaps is the most significant development recently in the practice of personality study (34). This model views the use of batteries as one of the great strengths in clinical inquiry by creating circumstances under which samples of behavior can be checked against each other. It stresses the use of techniques which permit the observation of interacting variables and denies that tests of single psychological variables that attempt to study these variables in isolation is either clinically useful or theoretically possible. This model stresses the use of techniques that yield scores as well as verbal and behavioral content and denies that a lack of primary interest in scores as such makes for a less objective method of study unless one uses the term "objective" in a pedantic sense rather than in the sense of primary concern with the "object" of study—the patient rather than the score (12).

One of the critical problems in clinical practice is the extent to which there should be standard batteries, and to what extent should batteries be determined by the reformulation of the problem. Thus, Rapaport (21) suggests a fairly intensive routine battery and offers a reasonable rationale for clinical practice being organized in this manner. This raises the serious question whether in so doing our testing techniques are becoming the center of the clinical process rather than

the problem determining the course of clinical inquiry. To me this does not present as serious a problem as it does to some if batteries such as the one recommended by Rapaport are the basis for our discussion. These batteries are recommended on the basis that they provide the opportunity to observe a multiplicity of interacting variables. If the battery is selected from the point of view of providing adequate samples of behavior of a patient, among which are presumed to be the particular variables with which we may be concerned, this structures the appropriateness of the use of the test battery. The presumption in the use of such a standard battery is that we are dealing with major dimensions of human personality which should be relevant for the study of all problems.

There is the danger in any area of inquiry that one may become too technique-oriented. It is quite easy to become enamored of instruments of measurement or observation but it is obvious that such instruments do not make for a field becoming scientific or disciplined—they are merely *means* to an end. Maslow (14) recently has indicated that American psychology has tended to become too technique-oriented. He points to some psychologists who will pursue a problem if it can be studied with animals or the psychologist who will perform a study providing he can subject the data to factor analysis. Here one sees techniques holding priority over the nature of the problem, which is contrary to true creative scientific inquiry. Our techniques are indeed critical but we must never lose sight of the fact that they are still techniques which cannot be worshiped for their own sake but only because they permit solutions to problems at hand.

Interactional Process

This model views the interpersonal relationship between examiner and subject as a requisite for clinical inquiry (5, 8, 19, 25, 26). It challenges

the emerging stress by some that patients can be studied as effectively in group testing situations as in individual testing situations. This idea will probably never go out of style; it will be ridiculous year after year. *Clinical inquiry*, if it means nothing else, involves a contact between two people. To consider clinical inquiry on any other grounds is to this model a perversion of the meaning of "clinical." Now, it is true that until quite recently, this interaction was considered insignificant in clinical diagnosis except as it determined the representativeness of a subject's performance on a test by consideration of the subject's conscious attitudes toward the testing experience. This was essentially the meaning of rapport. But with this model, the psychological diagnostic examination is viewed as an interactional process, not only between subject and task but also between subject and examiner and examiner and subject. It is accepted that personalities are "open systems" which are in constant interaction with the environment which includes not only the examiner, but the nature of the situation, the implications of being tested, etc. It is White's (34) suggestion that perhaps batteries of examiners may here be as important as batteries of tests in order to more fully sample the nature of a patient's interactional behavior.

Deutsch (4), approaching the problem from the point of view of a field theorist, sees the test situation as one in which the clearly defined roles of examiner and subject involve certain basic social prerequisites and consequently test interpretation cannot be adequate unless it is within the framework of the social nature of the test situation. He states, "The projective test situation is a social situation in which the responses or behavior of the subject reflect his perception or subjective definition of the situation, his intentions in the situation, and his tendencies to behave in situations which are subjectively defined in the

way that he has subjectively defined the test situation. The subjective perception of the situation will be determined not only by his personality but also by such situational factors as the following: the characteristics of the task with which he is confronted, the interpersonal setting created by the personality and implicit expectations of the examiner, the social statuses of the examiner and the subject, the institutional setting and function of the test, and the cultural definitions of appropriate behavior in the testing situation" (4, p. 433-4).

Schafer (27) approaches this problem from the point of view of psychoanalytic theory and practice and attempts to relate the phenomena of transference and counter-transference to the clinical test situation. He has portrayed the interpersonal dynamics in the test situation in terms of the needs and problems of the tester as well as the patients. The import of these recent discussions is not only that there is an interpersonal interaction in diagnostic testing but the nature of this relationship has significant bearing on the data procured and therefore on the interpretation that the psychologist makes of his data. I know that there are some who deny that this relationship bears any significant role in determining the kind of data that will be elicited, while at the same time these do not deny that the clinical method involves an interpersonal process. A fair number of good research investigations seem to indicate, however, that this interpersonal relationship may not have a trivial effect on a subject's performance (1, 9, 11, 13, 24, 29, 32).

If this be so, does this lead to the conclusion that clinical techniques are without worth because of their presumed "unreliability" since varying the examiner should theoretically introduce variations in the subject's responses? This of course has been one of the sharp barbs most directed at projective techniques because their very nature makes them more sensi-

tive to the interactional process. I would venture to predict that any test, clinical or non-clinical, is subject to the effect of this interpersonal equation although to varying degrees, reflecting the sensitivity of the clinical instrument to the subtleties of personality and the test situation. McClelland (16) has recently argued that the need for "test reliability has been greatly exaggerated by American psychologists."

Clinicians do not look upon this interpersonal equation and its effect on performance as a weakness of the clinical method but rather a strength that enriches the understanding of the subject. To be sure, we need to understand more the nature of this relationship and how it does effect performance; and we need to know how to interpret this for the purpose of patient understanding. The knowledge of the role of the interpersonal equation in clinical diagnosis can extend the range of data that is now available to the diagnostic clinician.

The knowledge of these interactional influences has changed the character of supervision in professional clinical practice. The emphasis has shifted from teaching principally test interpretive skills and now includes understanding the nature of the interactional processes and the way these may have determined the subject's responses. To be sure, much of the interactional phenomena are based on irrational ideas and attitudes in both patient and clinician which are beyond superficial comprehension but knowledge that such interaction plays a role can help avoid some of the predictive errors which clinicians make. The need is for more research to determine the effect of what interactional variables on what test behavior and on what subjects. The importance of these considerations have led to what I hope will some day become standard clinical practice—the interview following the completion of testing in order to clarify the nature of the interpersonal

equation that existed during testing.

Collection of Data

In this model, the emphasis is on the broadest collection of observations so that we do not draw "sufficient" conclusions from insufficient data. It stresses that ideally no observation essential to the psychological variables being studied is omitted. While this model does not confuse the myriad collection of unrelated data with science, it does recognize that clinical inquiry is initially a process of hypothesis formulation in which every datum is relevant. Once the hypotheses have been established, data collection is directed by the hypotheses themselves so as to establish their validity.

The Clinician

This model views the clinician as crucial to the process of clinical inquiry since it accepts the thesis that no psychological instrument can make the observations nor do the thinking that is required in the problem-solving task of clinical inquiry. It sees the clinician as one who is constantly questioning while searching for explanations in clinical study, who must be able to tie together diverse data and observations, who is capable of adapting himself and his techniques to the patient and the special problems he presents, who will benefit from his experience because he wants to learn from it, who can face contradictions as well as confirmations in his study of a patient. Not unlike the requirements of psychotherapy, he must be able to listen to his patient at various levels, to the usual meanings of his words, to the symbolic and latent implications of his verbalizations, to his behavior, his attitudes, his movements.

Interpretation

The heart of the process of clinical inquiry is the process of interpretation. Schneidman (28) has demonstrated that there are certain common steps in the clinical analysis of the TAT which are performed by dif-

ferent examiners. However, it has been my observation that there is no single interpretive process used by all clinicians. Rather, there are many such processes, some preferred more than others by certain individuals and in all probability all are used to some extent by most. If this be so, then the question of which is the best method of interpretation can only be answered by research where it would be possible to structure the necessary controls to insure appropriate evaluation. I shall here attempt to describe these interpretive processes as I see them and in so doing to caricature them since it is hardly true that any one method is used in isolation.

Before considering these types, we might consider what the object of the interpretive process is. Clearly it is to evolve an explanation that will answer the question raised at the beginning of the clinical inquiry. What is the nature of the explanation in the study of human behavior? It is in the form of an hypothesis that the clinician advances which meets the test of accounting most adequately for the observations that have accrued. It is within this context that the process of interpretation has been referred to as a process of hypothesis construction.

I have tended to see this process of hypothesis construction beginning with the referral, and the initial formulation of the problem implying a tentative hypothesis or hypotheses which can be tested by observations and data. The very first tentative hypothesis emerges from knowledge of what is already known about the patient, from the experiences and theories concerning the patient's problem advanced by others and by the previous experiences of the clinician himself. Where the problem is such that there is nothing of relevance known about the patient, where there exists no reported experiences of others or theoretical formulations, or where the clinician has had no prior experience with such a problem, a tentative hypothesis cannot be formulated unless

it be in the form of an intuitive hunch. Some clinicians will resort to this intuitive hunch to direct their inquiry. Others will avoid such an attempt at even tentative explanation and engage in a process not unlike an exploratory study. They will interview the patient briefly, use a test or series of tests that they have learned help to chart a course for their inquiry but in either case there comes some point in the clinical process where an initial tentative hypothesis or hypotheses begin to emerge and the further direction of clinical inquiry is to elicit observations and data that will disprove the initial hypothesis or modify it.

This model views the clinical process as a continuing process of hypothesis reformulation leading to the accrual of new pertinent evidence and insights. One significant role of test batteries is to provide new data pertinent to the hypothesis being considered. As in all forms of inquiry, one does not prove an hypothesis; one fails to disprove it and in clinical inquiry the hypothesis stands if it cannot be disproved. To some, it may appear that it is unscientific to develop an hypothesis before all the "facts" are in. In actuality, scientific research can begin with an hypothesis, conclude with an hypothesis, or develop one in the course of inquiry (10).

How do hypotheses emerge? What is the nature of the thought experiences that leads ultimately to that first hypothesis? Actually, little is known of this, the most creative aspect of the process of clinical inquiry. Some have even suggested that this cannot be subjected to study and to do so would be irrelevant. Their concern is with the validity of interpretation, not the means by which this is achieved. However, it is my contention that there is no single method of clinical interpretation, and until we understand the process more adequately, we cannot know which method is more valid. Furthermore, there is no reason to believe that the cre-

ative process which is involved here is any less subject to study than any other form of creative behavior. To the clinician who begins with an intuitive hunch, the presumption is that this cannot be explained on rational grounds, that this is an entirely subjective process of interpretation. Whether this is as truly subjective as some have stressed may be subject to some question. Cofer (2), in an analysis of clinical intuition, concluded that intuition means "unanalyzed, unrecorded, and perhaps un verbalized observations by the clinician." But where hypotheses emerge not as intuition but from data and observations, what is the nature of their emergence? Obviously the hypothesis is not in the data and observations. Rather the clinician does something to them which then emerges as a hypothesis.

This model recognizes two methods of hypothesis construction. One is essentially unplanned, a fumbling process in the search for explanation, finally emerging as does insight (7). The other method of hypothesis construction is a process of slow, orderly, inductive reasoning where data and observations are slowly integrated into an explanatory proposition which becomes the hypothesis. Tomkins (33) has indicated that the time-honored canons of inference can be applied to TAT data, thus demonstrating that the formal logic of inductive science can be applied to clinical data.

What guides the nature of the thinking process as the psychologist develops his hypotheses? This model recognizes three methods whereby data become meaningful. First, is interpretation by authority. This is the most prevalent in the lives of our younger colleagues but is represented in most of us. In using this approach, the clinician is saying: the authority has a vast body of experience in which I can share vicariously. These may be in the nature of formal objective norms or subjective norms which represent an important

accumulation and summarization of vast experience. The authority has also used his experience to develop theoretical conceptualizations of the meaning of data and this theoretical thinking is available for the interpretative process. In essence, this is not unlike the assumptions that are made in supervision—the supervisor like the authority has subjective norms and a better comprehension of theory relative to the tests, and the trainee shares vicariously in the supervisor's knowledge. The difference is that the supervisor is dealing with his patient while authority is dealing with classes of cases of which his case can only be an approximation. This represents the chief source of error—generalizations which may not embrace the particular patient. This method of interpretation has led Rapaport (22) to caricature those clinicians as operating "with the help of texts used as dreambooks" so that unbridled fantasy of the dream operates or each datum yields the same interpretation patient after patient. As it has been said, "books are good enough in their own way but they are a highly bloodless substitute for life." This model accepts sharing of experiences and ideas as of importance in interpretation, but emphasizes that the clinician deals with the facts as they are rather than what someone has said they ought to be.

The second method is interpretation by subjective personal norms. This is interpretation of data in accordance with one's personal experience. Here there is presumed to be an accumulation of experience which has resulted in some categorization, however simple, which serves as subjective norms for interpretation. The individual says, "I have seen this occur several times before in a certain category of patients and this helps me to understand this particular patient." This model accepts the importance of personal experience in clinical interpretation but recognizes that the norms of the clinician may be unre-

liable for a variety of reasons and until we understand more as to how an individual accumulates such norms and uses them we are not in a position to know how such norms may be improved. It may be that experience for some of us teaches much, but "learns us little."

The third method is interpretation by theory. This model recognizes that an important mode of clinical interpretation is through the intelligent and valid use of theory based on the presumption that data about personality can be understood by the application and use of personality theory, here defined in its broadest possible terms without reference to any specific theory. But this too has its dangers, not the least of which is the tendency of theory in some hands to become a straitjacket that stifles the creative process of clinical inquiry. This is to be seen most forcefully in the stereotypist who uses theory but to create stereotypes in the image of his theoretical premises. This is reductionism at its extreme.

This model views theory as a compass that charts a direction but not as a road map that tells you where you will finish the trip before you have decided where you are going. It does not reduce the clinician to the role of a technician who has learned a formula and this formula is the "Open Sesame" for all inquiry. It charts direction—it directs us away from the improbabilities to the probabilities but leaves the clinician with his most precious possession, the capacity for creative thinking. This model stresses that clinical interpretation involves creative thinking at its height and has no place for him who is afraid to think. Theory is general but the patient is specific and the specificity lies not in the theory but in the data which represents the uniqueness of the patient. The clinician does not ignore data because they are not stressed by theory. He does not hesitate to cut away ruthlessly those theoretical concepts that are inconsistent

with his data (12).

While this model accepts a number of modes of interpretation, it has only one criterion of when hypothesis building is complete and that is when the hypotheses have successfully accounted for all of the available data and observations. In other words, when the hypotheses are internally consistent in that the data can be subsumed under the structured hypotheses. The clinician must be aware that where other hypotheses may be equally valid, further inquiry is necessary. However, he is never absolutely certain of his hypotheses as in all scientific inquiry. The test lies in predictions that they permit and in the validity of these predictions.

This model, as we described earlier, views the development of *strategic hypotheses* as consistent with scientific method and the objective of greatest validity. These hypotheses will be comprehensive, to which new elements can be added as further data accrues. These may be data from the past as well as the present. New data should not only be capable of fitting into these hypotheses—they should be capable of being deduced from them.

Prediction

Out of the creative process just described has emerged *strategic hypotheses* that attempt to explain the individual patient. Depending on how integrated these hypotheses are, it might be said that there has now evolved a theory of the particular individual. This model views the process of prediction as vital to the process of clinical inquiry. It accepts the fact that the crucial function of the clinician in clinical inquiry is to make predictions concerning the possible courses of development in a patient. The clinician is not concerned only with prediction to the future. Statements pertaining to the present as well as the past are predictions in the sense that these facts are unavailable to the clinician and he is predicting their presence or absence in the past

or in the present. But in clinical inquiry, the primary goal is to predict to the future and hypotheses are of meaning only insofar as they permit the clinician to do this. Kelly has said that clinical psychology is more than "a plot of the person's present position or a log of his past navigation" (12, p. 186). If one looks upon clinical inquiry as leading to a course of action concerning the patient, we might say that the clinical diagnostic phase is the planning stage for anticipating the direction in which the patient may move.

The model accepts the belief that predictions which are based on deductions from *strategic hypotheses* offer the greatest opportunity for validity. It is this facet of the clinical process that has been the focus of considerable discussion relative to the merits of statistical versus clinical prediction.

This model recognizes that the clinician cannot make all kinds of predictions and must be concerned with a number of issues: (1) The clinician can predict only behavior under specified conditions, i.e., contingency predictions. Such predictions are consistent with our knowledge of personality theory which indicates that consistency of human behavior cannot be considered independent of the specified conditions under which the behavior is exhibited. (2) Predictions must be expressed in the form and language of the clinician where he deals with multiple variables in describing his patient rather than in terms of rating scales which are foreign to the clinical process and destroy the configurational description which the clinician attempts to provide. (3) He can predict only propensity for behavior unless there has been an adequate study of the personality including the nature of the ego and its controls. (4) He can predict only to those situations about which there has been sufficient accumulation of knowledge and experience. Thus, in predicting to therapy

or discharge, the clinical psychologist has available a greater fund of knowledge to guide him than in predicting to success as a clinician. Actually, our knowledge is woefully lacking even in these areas. (5) Predictions should not be for events that occur at some remote time in the future. Too many factors are unknown concerning individual changes to permit predictions to events far removed from the time of the prediction. (6) All predictions should be in terms of probabilities. It is unimaginable that we can predict with certainty for there are sources of error in the clinical method as there are in all forms of inquiry. We test people in many situations but not in all. Significant variables may either not be stressed by theory and yet be very pertinent to prediction or these variables may not be revealed by the tests. In addition, theory itself is never perfect. (7) Predictions should be based upon an adequate sampling of the patient's behavior although in the practical clinical situation problems of clinical economy often do not make possible the completeness of the study demanded. (8) Predictions must be of a sort that are subject to disproof. While hypotheses may not be subject to direct disproof, predictions must be to meet the test of scientific inquiry. We must avoid those skillful predictions which are both true and false at the same time.

There has been the suggestion that the predictions that clinicians make are safe, i.e., either trivial or of general applicability. A recent study that related prediction from projective test data to clinical judgments indicate that this is *not* so (30)!

Validity of Predictions

This model requires that the psychologist follow up on his predictions, and such follow-up should be a built-in feature of clinical inquiry for if we predict wrong, no one will forget it, but if we predict right, nobody will remember it. Unless such a system of verification is built into the clinical

method, it falls far short of achieving the status of a method of science. We may predict wrong, but it should be a wrong that can be self-corrective.

This model views clinical inquiry as but one part of a larger process of clinical inquiry in which are involved psychiatrists, medical practitioners, social workers, nurses and others. It is my thesis that all of these professional fields use a type of inquiry in their study of patients which may not be unlike the clinical process described herein. Each of these reaches a point in his clinical inquiry where he has prepared a communication for the other professional staff. One of the unique characters of the process of dealing with the mentally and emotionally distressed person in contemporary life is the use of the clinical team in the evaluative process. It is at a stage of inter-communication readiness that the psychological clinician communicates his findings and is able to test the validity of his predictions against other data made available by the other professions. Thus, the process of hypothesis construction and testing still continues and we may say that in true clinical inquiry it never ends until the agency's contact with the patient ceases and even here hypotheses are still re-evaluated on the basis of new data which may come to the attention of the staff.

It is important to stress the ongoing process of clinical inquiry because of recent research that has occasionally utilized the clinical report as the basis for judging the validity of predictions when this written report has been superseded by revisions in hypotheses which have not been recorded in our records. This is perhaps one of the serious limitations in our record keeping procedures which demonstrates that the scientist's recording of new developments has not been incorporated into the value system of the clinical psychologist.

The Psychological Report

Much could be written about the

failures in the clinical mode of written and verbal communication (6), but this may take us too far afield from our central theme. Suffice it to say that we have need to do much to eliminate the ambiguity, reduce the erroneous and unwarranted interpretations that others make of our communications and to maximize the usefulness of our reports. The latter is important because so much stress is being placed on accuracy of statements that we have ignored their usefulness.

Frequently, there is a semantic problem. However, more frequently, it is a failure to translate from the psychological variables emerging from the inquiry to the language that originally brought the patient for clinical investigation. Often times, there is no common language and the clinical psychologist must face the problem of sharing in the search for such a language or in recognizing that his variables, while meaningful to him, are utterly of no value to others.

NEED FOR RESEARCH

I have offered a model for clinical inquiry that I have stated achieves the status of scientific inquiry. The method of clinical inquiry herein described, like all forms of inquiry, has its errors which may result from failures anywhere in the clinical process. However, let us not fail to recognize that while this method cannot guarantee absolute certainty, that it does reduce the degree of uncertainty. How do I know? I don't! This is my conviction and the ultimate test lies in research.

There has been much talk of the evaluation of the effectiveness of various forms of predictions without sufficient consideration of how one does evaluate. The problem has arisen in the evaluation of mental health programs and Southard (31) has listed three methods of evaluation which are based on the value systems by which results are to be measured: (1) Evaluation of worth by the recipients.

This would be evaluation by non-psychologists such as psychiatrists and social workers on the effectiveness of the service rendered. Here there is no specific yardstick, there is the danger of personal bias, of faulty judgment but still this is one method of evaluation that cannot be ignored. (2) Appraisal by experts who are considered to be objective. This is the method of "subjective conviction" and would be comparable to a group of psychologists subjectively evaluating a program in comparison to others. (3) The evaluation of worth by scientifically controlled methods.

We have*measured the worth of the clinical method by the first two that I have listed. Our problem now is to add a more scientifically controlled type of investigation to demonstrate the efficacy of the clinical method. While Meehl (17) has collected some twenty studies demonstrating the superiority of the actuarial over the clinical method, in reality there has not yet been performed the crucial experiment that eliminates the serious objections to these studies (15). At a time when the challenge is being thrown to us by adherents of the actuarial method, it is not enough for us to be negatively critical about research that questions the validity of clinical inquiry. Ours must be a more constructive and responsible attitude toward designing and participating in research which will give the final answer to the raging controversy. You and I are convinced what that answer will be—the question is, are we willing to demonstrate it. My hope is that we will not be found lacking in providing the leadership for such research. After all, it is not important that we be right. What is important is that our subjective feelings about the values of our functioning *not* be accepted as scientific evidence. I share this faith with you, but we are ready now for the next stage—demonstration that this faith is valid. Statements of subjective feelings about the

worth of our clinical efforts cannot be substituted for scientific evidence. History is too replete with examples of the final rejection of mistaken convictions.

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Objectifying the Subjective—A Methodological Approach to the TAT¹

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Experimental work with projective techniques presents many problems to the research worker. One of the more difficult problems is related to the discrepancy between the objective, atomistic approach which usually characterizes this type of research, and the subjective, holistic approach which is representative of the manner in which projective instruments are used in clinical practice. On the one hand validity seems to be sacrificed for the sake of reliability while, on the other hand, reliability is sacrificed for the sake of validity. Many attempts are being made to harness subjectivity and holism in the service of reliable, objective research. The present study represents an attempt in this direction. More specifically, it presents a methodological approach utilized in the analysis of the Thematic Apperception Test (TAT) for research purposes and the reliability of judges employing this method.

In reference to research with the TAT, there has been an emphasis upon frequency of theme tabulations (4, 10) and objective scoring approaches (1, 3, 6, 8). These methods seriously limit the subjective, holistic appraisal of protocols and may well overlook important qualitative features. Perhaps a step toward the solution of this difficulty is touched upon by Eron (5) who states, "The use of rating scales, however, affords an opportunity to combine qualitative, clinical judgments and a more or less rigorous quantification. It is possible

for the ratings to be as subjective and holistic as necessary, but it is essential that the criteria be verbalized so that the method can be communicated and subsequent raters can utilize the scales with comparable results." In the present study, Eron's recommendations have been modified in one important respect. Separate rating scales for isolated variables have been avoided. Instead, one rating scale with a number of variables is employed with the aim of approaching more closely the description of personality, in this case characteristics of the TAT hero, as a Gestalt. In addition, the criteria utilized for rating are broad and generalized without making the rating procedures so specific that it leaves the individual rater little freedom for subjective appraisal. The criteria for rating protocols in the present study is a compromise between the objective and subjective approaches and is effected by utilizing, as rating procedures, many of the clues and methods utilized in the clinical application of the TAT.

METHOD

Eighty statements were prepared, representing the TAT hero characteristics that appeared in a random sample of TAT stories and in the common themes to TAT cards as given by Stein (12). The statements were derived from stories to Cards 1, 3BM, 6BM, 7BM, and 14, and reflect the traits and attributes, feelings and emotions, experiences, tendencies toward behavior, goals and orientations that people generally attribute to their TAT heroes. These statements are presented in order to give the reader an orientation to the variables which were considered.

¹ The basic result of this research is presented elsewhere (7). The present article represents an elaboration of the method as a demonstration of one approach to the TAT for research purposes.

LIST OF STATEMENTS

1. ambitious
2. works hard to achieve a desired goal
3. discouraged over lack of success
4. capable
5. believes in business before pleasure
6. an independent person
7. gets very interested in things
8. dislikes inactivity
9. envies others
10. has a good imagination
11. has difficulty sleeping
12. a serious person
13. gets drunk
14. gambles
15. stubborn
16. sometimes felt like leaving home
17. tries to comfort people in their sorrow
19. thrifty
19. concerned about appearance
20. understanding of peoples' problems
21. tells people what to do
22. enjoys the beauty of nature
23. has been a disappointment to father in some respects
24. thinks about travelling in far off places
25. takes good care of possessions
26. learns from experience
27. sensitive
28. has had unhappy love experiences
29. becomes discouraged easily
30. dislikes telling sad news
31. feels blue and downhearted
32. worries a great deal
33. sometimes thinks about suicide
34. displeased with home life in some respects
35. often feels tired
36. gets over disappointments quickly
37. sometimes feels like crying
38. upset by things which later seem unimportant
39. enjoys being alone
40. gets depressed when alone
41. irritable
42. has good control over emotions
43. feels bitter toward people
44. tries to get even with people
45. rarely expresses anger
46. finds it difficult to control temper
47. thinks about enjoyable things
48. thinks how nice it would be to be a success
49. gets into trouble
50. ashamed after doing something wrong
51. looks at the bright side of things
52. fears doing the wrong thing
53. finds it difficult to make decisions
54. daydreams a good deal
55. concerned about the future
56. would never steal under any circumstances

57. forced to do unenjoyable things
58. resents being forced by parents to do things
59. obeys parents
60. does what other people advise
61. often wronged by other people
62. was punished by father
63. was punished by mother
64. has felt angry at father
65. has felt angry at mother
66. spoiled by parents
67. sometimes disagrees with mother
68. has been a disappointment to mother in some respects
69. argues with mother when there is a difference of opinion
70. feels close to mother
71. liked to talk over troubles with mother
72. has confidence in mother's advice
73. as efficient as father
74. rarely asked mother's permission to do things
75. follows father's advice
76. feels close to father
77. dislikes being told what to do
78. respects father
79. helped by father's guidance
80. treated like a child by father

The Q-sort rating technique (13) was adopted to give a single composite description of any individual's TAT heroes. It was the task of the judges to sort these 80 statements into nine piles approximating a normal distribution ranging from those statements which were most characteristic of the TAT hero to those which were least characteristic.

A set of instructions, more properly called suggestions, were drawn up to provide some framework whereby the raters could handle problems of sorting in much the same manner. These instructions represent an attempt to achieve some uniformity without sacrificing the more global, clinical approach for the sake of reliability. It will be noted that depth interpretation was reduced to a minimum by placing primary emphasis upon manifest content. The emphasis upon manifest content does not mean that subjectivity was eliminated. In fact the decision to avoid a complicated scoring manual was motivated by the desire to allow clinical judgment and impressionism to

operate more freely than would be possible if the rater were restricted by rigid scoring rules. While this method sacrifices some degree of reliability, it maintains much more of the unique features of the individual protocol than scoring schemes or frequency of theme tabulations.

INSTRUCTIONS FOR Q-SORT RATINGS FROM TAT PROTOCOLS

A. In the five stories there will usually be several outstanding qualities of the hero or of the hero's behavior. These belong in the extremes even when it is necessary to employ a slight degree of inference. For example, we can score the statement "feels close to mother" as high even though it is not expressed, if the mother is pictured as understanding, if the subject likes to take troubles to her, if she helps him, if he is concerned about her, and if there are no negative feelings expressed. These outstanding characteristics can frequently be chosen by the length of the story, the intensity of affect, the embodiment of the essence of the particular story, the frequency of appearance, and numerous qualitative indications.

B. Directly given statements such as tiredness, daydreaming and the like should not be weighted too highly when they are not particularly stressed. Although items which are directly given receive higher weighting than items of the same intensity but not directly given, the rater should always keep in mind the necessity of estimating the strength or intensity as expressed in the TAT.

C. The more *frequent* and the more *unusual* a quality, characteristic, or behavior of the hero, the higher it should be weighted.

D. Omissions should be considered. For example, if the stories reflect particularly stressful scenes where we would normally expect the expression of anger, then we would weight the item "rarely expresses anger" highly (if anger is omitted). Contrariwise, reactions which are out of keeping

with the expressed situation are given additional weight.

E. Where a certain behavior in the stories implies, rather directly, a certain feeling or attitude, this may be weighted in accordance with the intensity of the expressed behavior (see example in A, also, crying may imply depression or shame or lack of emotional control, etc., depending upon the rest of the story).

F. Because of inconsistencies in personality, differences in the stimulus properties of the card, etc., contradictory themes frequently appear in the TAT. It is similarly possible to have contradictions in any of the rather broad Q-sort categories. The contradictory elements should be considered separately and weighted appropriately, e.g., a person may be both elated and depressed, energetic and inactive. Sometimes the slightly different wording on the same general variable may prove useful, e.g., a person may be ambitious but does not work hard to achieve a desired goal. However, when there is only one card pertaining to a variable where contradictory conceptions have been expressed, determine which of the polarities seem most important but do not weight it as highly as an item where no contradictory conceptions have been expressed.

G. Where several themes are expressed on one card, the separate stories should be considered and weighted appropriately.

H. When it is necessary to ask yourself the question "would a person like this be such and such" there is evidence that the variable under consideration is not really expressed in the TAT and that an increasing degree of inference is being employed. It is true that it will be necessary to do this to fulfill the requirements of the Q-sort but these items should not be weighted as highly as those which are more directly obtainable from the TAT protocol.

I. The middle categories of the Q-

sort should consist, mainly, of those items which are indeterminate from the TAT stories. However, if the majority of the items *fit* the TAT hero, it may be necessary to place the indeterminate items on the least characteristic side.

J. One should be careful to remember that we are sorting for the qualities of the TAT hero and not for qualities of the subject. This is sometimes a very difficult distinction to make. For example, if the subject gives several alternative stories or cannot decide upon an outcome, we often infer that he finds it difficult to make decisions. However, this is not the same as saying that the TAT hero finds it difficult to make decisions. To come to that type of conclusion for the purposes of this research we would expect the story hero to be confronted by a situation where he (the hero) cannot make a decision.

Five judges were selected, all of whom had had experience with the TAT. Each judge was given a sheet of instructions for rating, the rating procedures were discussed, and the judges sorted one sample protocol with the author to get a general impression of the task. Ten records, both normal and deviant, were selected at random. The author rated each of the 10 records and secured two other judges' ratings for each record so that there were three ratings or sorts for each record.

RESULTS

Since three judges rated each record, judge A's sort could be correlated with judge B's and C's, and judge B's and C's with each other. The three reliability coefficients (AB, AC, BC), each reflecting the degree of agreement between two judges in characterizing the TAT hero, were computed by means of the product-moment correlation formula suggested by Cronbach (2) for use when the scores of all persons have the same mean and variance as in the case of Q-sort data. The 30 reliability coefficients

obtained from the three correlations for each of the 10 records, range from .37 to .88 with a mean correlation of .72 and a median of .75. When computing the average correlation by the method of z-transformation of a correlation coefficient, the reliability figure was .74. The frequency distribution of inter-rater reliability coefficients is presented in Table I.

TABLE I—Frequency Distribution of Inter-Rater Reliability Coefficients

Reliability Coefficient	Frequency
.80 — .89	4
.70 — .79	19
.60 — .69	4
.50 — .59	1
.40 — .49	1
.30 — .39	1

DISCUSSION

The obtained correlations compare favorably with other studies reported in the literature (1, 9, 11) dealing with similar types of ratings, and indicate that judgments on this type of material can be reliably made. While studies with more objective types of data, or more objective scoring manuals are often capable of achieving a higher degree of reliability, the present method is offered as an attempt to deal with the test in a clinical, holistic way and still maintain an acceptable degree of reliability.

In the present study, the judge's task was to characterize the story hero in accordance with the major purposes of the larger study in which this method was utilized (7). This is a limiting factor of the reported investigation as a characterization of the story teller rather than the story hero is more closely allied to the application of the TAT in the clinical setting. The methodological approach appears equally applicable to the story teller as well as the story hero, and, as such, offers many possibilities for further research which can im-

prove our understanding of what can and cannot be done with the TAT, as well as to improve methods for doing it. In particular, the statements can be changed so that many different variables, or trait universes may be investigated—psychoanalytic character traits, methods of interpersonal relatedness, Murray's needs, etc. By adapting rating instructions in a variety of ways, it is possible to learn something about the reliability or unreliability of judgments from the TAT, concerning such things as estimating self concept, predicting behavior, characterizing core conflicts, assessing attitudes toward psychotherapy, judging feelings surrounding peer, sibling, and authority relationships, etc. In addition, by comparison with outside criteria, validity can be readily assessed or, at least, reliability of judgments from two different sources of data.

SUMMARY

The present research is a reliability study of a method of TAT analysis for research purposes. This method represents an attempt to employ subjectivity and holism by utilizing a) a single multivariable rating scale (Q-sort) rather than separate univariable rating scales, and b) a broad descriptive set of rating instructions making explicit many of the subjective clues used in the interpretation of the TAT in clinical practice rather than a detailed rating or scoring manual which leaves little freedom for subjectivity and impressionism. The average correlation of inter-rater reliability coefficients was .74. The results tend to suggest that this approach

is capable of yielding acceptably reliable results. The suggestion that different rating instructions and different statements may be employed in the investigation of a variety of problems is made.

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Responses of School-Children to Human and Animal Pictures¹

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PROBLEM

In his C.A.T. (Children's Apperception Test), Bellak (1, 2) used animal pictures because he believed that children identify themselves much more readily with animal than with human pictures. This assumption by Bellak was tested by Bills (4), who conducted an experiment in which forty-eight children told stories about both T.A.T. (human) cards and animal cards, and it was found that almost all the children told longer stories to the animal cards than to the human cards. On the other hand, Light (5) compared five C.A.T. cards with five T.A.T. cards. In this experiment, using 75 fourth and fifth graders with a mean age of nine years and eight months, five criteria out of six yielded significant differences which suggested the superior productivity of T.A.T. (human) cards to C.A.T. (animal) cards. Biersdorf and Marcuse (3) pointed out that in comparing the productivity of animal and human pictures it would seem necessary to consider the nature and the comparability of the situations portrayed in the two sets of pictures. When two sets of dissimilar pictures were employed, it would be difficult to determine which difference was responsible for the result obtained: situations or the use of animal and human figures. Biersdorf and Marcuse chose six cards, Nos. 1, 2, 4, 5, 8, and 10 from the ten cards in Bellak's C.A.T., and six corresponding pictures utilizing humans. The scenes, situations, sizes and the shadings of each sets (human and animal) were made as nearly equivalent as possible.

Thirty first-graders with a mean age of seven, were asked to tell stories in response to these two series of animal and human pictures. There was no significant difference in productivity between six animal pictures and six human pictures. Using the same method as Biersdorf and Marcuse (3), Mainord and Marcuse (6) experimented with emotionally disturbed children and found that one criterion out of six yielded a significant difference which suggested the superior productivity of human pictures.

Since Bellak believes that the C.A.T. is suited for children from three to ten and the T.A.T. for adolescents and adults, Bellak's assumption seems to suggest that the superior productivity of animal pictures to human pictures decreases relatively as the children grow older. The present study was thus designed to answer the following questions:

1. With different criteria and age-groups (from those of Biersdorf, Mainord and Marcuse), what kind of difference will be found between the productivity to animal pictures to human pictures, equivalent in scenes and situations?

2. Is there any tendency toward relative decrease of productivity to animal pictures compared with human pictures as the children grow older?

METHOD

(a) Test Materials

Test materials consisted of the two sets of six animal cards and six human cards which were utilized by Biersdorf and Marcuse (3) and Mainord and Marcuse (6). Only the pictures showing the scene of toileting, similar to No. 10 card of Bellak's C.A.T., were partially modified for

¹ The author of this study is indebted to Dr. F. L. Marcuse of Washington State College for the use of the negative photo-plates of his H.A.T.

Japanese children.²

(b) *Subjects*

Seventy-two children served as Ss. They were divided into the following three groups. Group 1 consisted of 24 first-graders; their ages ranged from 6 years 4 months to 7 years 3 months, with a mean age of 6 years 9 months. Group 2 consisted of 24 fourth-graders; their ages ranged from 9 years 7 months to 10 years 4 months, with a mean age of 9 years 11 months. Group 3 consisted of 24 sixth-graders; their ages ranged from 11 years 6 months to 12 years 5 months, with a mean age of 11 years 10 months. Each of the three groups consisted of 12 boys and 12 girls. All children were selected randomly.

(c) *Procedure*

Each of the three groups was divided randomly into two smaller groups, A-group and B-group. Each of the three A-groups and the three B-groups consisted of 12 Ss, 6 boys and 6 girls. There were two sessions two weeks apart. The members of A-groups were presented with the six animal cards in the first session and with the human cards in the second session; the members of B-groups were presented with the human cards in the first session and the animal cards in the second. The order of presentation of the cards varied from S to S, but was constant for each S for the two sessions.

Group 1 was administered the test individually. An attempt was made to establish rapport by means of an individual standardized interview. The stories which the child told in response to cards were written down by the experimenter.

Groups 2 and 3 were administered

the test as a group. Six children from each of groups 2 and 3, consisting of three A-group members and three B-group members selected randomly, were tested at a time. Each child was seated in a child's chair at a child's desk, at a distance of about two meters from each other. After distribution of pencils and paper, the children were asked to write stories in response to pictures which the experimenter was going to show them. Then each child was given his card in the previously determined order of the presentation. The experimenter encouraged Ss to make stories as long as possible. Eight minutes after the presentation of the cards, the experimenter said, "You will finish your story after two more minutes, and now you will write the outcome of your story." After ten minutes the experimenter collected the cards. A minute later a new card was distributed to each S upside down. Most of the children finished their stories in the allotted time. Subsequent cards were treated in the same way as the first one. A five minutes recess was given between the third card and the fourth.

RESULTS

When the test was over, most children of all groups said that the test was very interesting. No card was rejected by any child. One hundred and forty-four animal stories and 144 human stories were told by each of groups 1, 2 and 3. The total number of the stories was 864. These stories were analyzed on the following eight criteria:

1. Response time in seconds, the length of time between the presentation of the cards and the S's first word in response to the card.
2. Time of total response in seconds, the length of time between the S's first word and his last word in response to the card.
3. Number of "Bunsetsu" (similar to words).
4. Number of characters mentioned.

² Since most Japanese children do not know the American or European style toilet and mistake it for something else, there occurs considerable discrepancy between the responses of children who know the American style toilet and of those who do not know it. Therefore, the Japanese style toilet was substituted for the American style.

5. Introduced figures.
6. Expressions of feeling.
7. Expressions of significant conflict.
8. Outcome, if present.

Two criteria, 1 and 2, were not used in the case of groups 2 and 3, because they were examined in groups. To test the reliability of the analysis, the test-retest method was utilized. The author analyzed the same stories twice with one month interval. An agreement of 94% was obtained.

Table I shows the comparison between the responses to the six animal pictures and the six human pictures. In Group 1, only one criterion (outcome) yielded a significant difference. In Group 2, two criteria (feeling and conflict) yielded significant differences. In Group 3, one criterion (feeling) yielded a significant difference. All of these four statistically significant differences are of the kind which suggests the superior produc-

tivity of human pictures to animal pictures.

Fig. 1, 2, 3, 4, 5 and 6 show the developmental aspects of the productivity of animal and human pictures. These figures would suggest that the relative productivity of animal and human pictures does not decrease as the children grow older from six years to eleven.

In Fig. 3, the percentage of animal stories containing introduced figures are apparently always more than those of human stories containing introduced figures. When the two average percentages of the three groups were calculated, the percentage of the stories containing introduced figures was 31.5% for animal stories, and 27.5% for human stories. But this difference was not statistically significant.

DISCUSSION

In this experiment, one criterion

TABLE I—Comparison Between the Mean Responses of Children (N-72) to Six Animal Pictures and to Six Human Pictures.

Criterion	Group	Animal Cards		Human Cards		t	P
		Mean	S.D.	Mean	S.D.		
1. Response time per card in sec.	1	6.06	5.52	6.56	6.50	.69	....
2. Time of total response per card in sec.	1	273.8	160.0	271.8	134.8	.11	....
3. Number of "Bunsetsu" per card	1	61.74	50.2	58.0	45.6	.69	....
	2	67.65	25.4	68.14	27.3	.16	....
	3	80.64	28.6	79.94	29.8	.15	....
4. Number of characters mentioned (in the picture) per card	1	2.79	0.91	2.80	.077	.10	....
	2	2.66	0.94	2.79	0.89	.10	....
	3	2.55	0.86	2.64	0.93	.09	....
5. Percentage of stories containing introduced figures	1	36.8		30.5		X ^a 2.07	....
	2	23.0		20.8		1.14	....
	3	34.7		31.2		.64	....
6. Percentage of stories containing expressions of feeling	1	42.3		49.9		2.34	....
	2	68.0		75.0		3.85	.05
	3	72.2		81.2		5.83	.02
7. Percentage of stories containing expressions of significant conflict	1	28.4		30.5		0.31	....
	2	6.5		13.9		9.30	.01
	3	18.8		19.3		.05	....
8. Percentage of stories having definite outcome	1	13.2		19.4		6.23	.02
	2	27.7		25.7		.44	....
	3	50.1		50.0		.05	....

FIGURES SHOWING THE DEVELOPMENTAL ASPECTS OF THE COMPARISON BETWEEN
THE PRODUCTIVITY OF ANIMAL CARDS AND HUMAN CARDS

Animal Cards — black bar

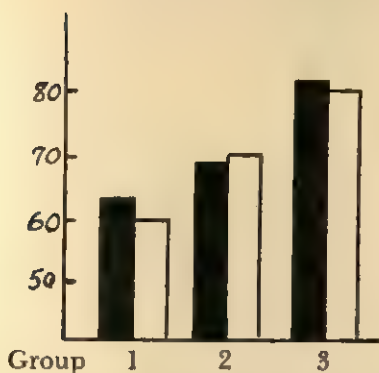


FIG. 1 The average number of "Bunsetsu" (words) per cards

Human Cards — white bar

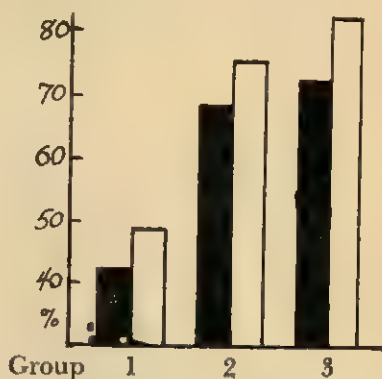


FIG. 4 Percent of the stories containing the expressions of feeling

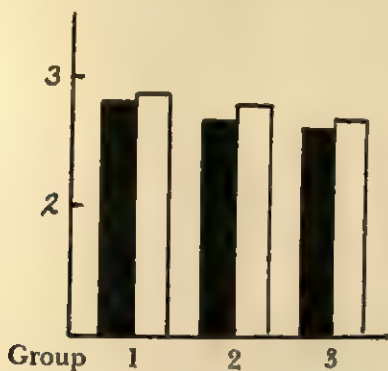


FIG. 2 The average number of characters mentioned (in the picture) per cards

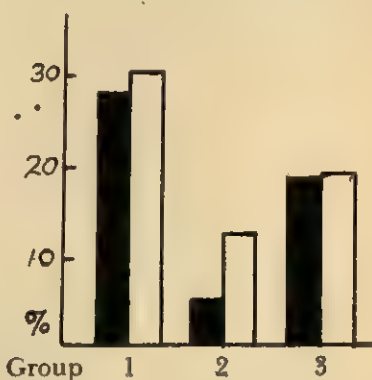


FIG. 5 Percent of stories containing expressions of significant conflict

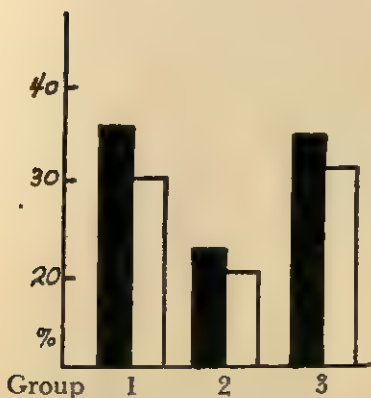


FIG. 3 Percent of the stories containing introduced figures

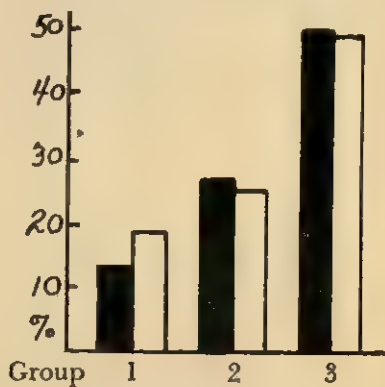


FIG. 6 Percent of stories having definite outcome

out of eight in Group 1 (6-year-olds) two criteria out of six in Group 2 (9-year-olds), and one criterion out of six in Group 3 (11-year-olds) yielded significant differences (at the 5% level or better), suggesting the superior productivity of human pictures. All of these criteria which yielded significant differences are different from those of Biersdorf and Marcuse (3) and Mainord and Marcuse (6). Developmentally, the results obtained did not show any tendency to indicate that the relative productivity of animal and human pictures, decreases or increases as the children grow older in the year range of the Ss in this experiment, and the criteria utilized.

These results contradict Bellak's assumption, and seem to suggest that children identify themselves a little more readily with human pictures than with animal pictures.

To answer fully the question raised in this study, further experimentation with pictures utilizing other situations and scenes, other age-groups, other criteria, and with normal and disturbed children are required. Furthermore, the author of this study wishes to point out that most of the animal pictures, that have been used, were "personified or human-like" animal pictures. Therefore, in considering whether or not children identify themselves more readily with animal pictures or human pictures, it would seem necessary to compare "real or natural" animal pictures with human pictures. There might be some differences between "personified" animal pictures and "real" animal pictures.

SUMMARY

Twenty-four first-graders (Group

1), 24 fourth-graders (Group 2) and 24 sixth-graders (Group 3) were asked to tell stories in response to six animal pictures and six human pictures, equivalent in scene and situations. This was done in order to determine whether there was a significant difference between the productivity of stories told to animal pictures and human pictures, and whether there was any tendency to indicate that the relative productivity of animal pictures compared with that of human pictures decreases as the children grow older. The results obtained were as follows:

One criterion in Group 1, two criteria in Group 2 and one criterion in Group 3 yielded significant differences which suggest the superior productivity of human pictures. As to the developmental aspects of the problem, the data obtained did not show any tendency for the relative productivity of animal and human pictures to change with age.

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Rorschach: Some Comments on Predicting Structured Behavior from Reactions to Unstructured Stimuli¹

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Much work has been directed toward an understanding of the stimulus and task situation presented by the Rorschach test. Fortier (1), Lazarus (9), and Schachtel (16) have been concerned with isolating the function of color and understanding the nature of the color response, Lord (11) and Gibby (2) have concerned themselves with the effect of the examiner on Rorschach performance. Hutt, et al. (5) have considered the effect of "set" on Rorschach performance. Schachtel (17) has written on the nature and quality of the human movement response.

In all this work the analysis is in terms of factors presumed to operate in the test or in the test situation. Nowhere is the point of departure an analysis of the ambiguous nature of the stimulus situation of the test itself and its role in the attempt to predict life behavior from reactions to the Rorschach cards.

Though the nature of the test situation is verbalized frequently enough, it has perhaps become so implicitly accepted that the question of its meaning has never been posed explicitly. Clinicians speak of it as an ambiguous or unstructured stimulus situation (6, 12). As such it is the way in which the examinee handles the unstructured stimuli provided by the cards that is taken as the basis for prediction of the individual's behavior.

The implication is that we can infer behavioral structure from behavior

elicited in a situation whose dimensions are purposely vague and unstructured. In other words, the assumption underlying projective theory here is that behavior in an unstructured situation tells something of behavior in real life situations.

The rationale for the necessity of utilizing unstructured material is relatively simple. Since individuals will behave in ways which they feel are socially acceptable it becomes necessary to frustrate this tendency by providing a novel stimulus situation (Rorschach cards) to elicit totally new behavior. This "new" behavior (the Rorschach responses) is then used as a basis for predicting the individual's real life behavior and motivation.

The question that presents itself is: If the test elicited behavior is a function of a totally new and unstructured situation, introduced to prevent the person from behaving in what he thinks are socially acceptable ways, what kind of real life behavior can such behavior predict? Does it predict how the individual really behaves to others and with himself? But the test is given in the first place to overcome his acceptable picture!

Is it that from the unstructured situation and the individual's response to it that we can predict how he would behave if he were to find himself in an analogous real life unstructured situation?

Several questions which we cannot, however, take up at this time, present themselves at this point. To what extent is the Rorschach really a completely unstructured stimulus situation? Ranzoni, Grant & Ives' (13) work illustrates that some of the stim-

¹ The writer is very indebted for critical comment and discussion to the following persons: Kenneth B. Clark, Mamie P. Clark, Pauline Fernandez, and Daniel S. Lehrman.

uli constellations within the cards have more organization than others. Thus, Rorschach responses must be qualitatively different in terms of whether or not they are responses to more or less structured stimuli situations. That is to say that the extent to which they are or are not imposed on the perceiver through the organization inherent in the stimulus field would bring very different aspects of the perceiver's contribution to the act of "perception" into the situation.

Thus the Rorschach could also be thought of as providing the subjects with the *choice* of responding at different levels of perception.² This, of course, raises the problem of *interpreting the choice*. That is, is it a conscious choice, is it imposed upon the person by the stimulus situation in terms of the prior experiences the individual has had with various sensory aspects of the stimulus field (see for example Schachtel (16)), or is it a question of repression, intelligence, negativism or combinations of these?

However, for the purposes of the present paper we are confining ourselves to the examination of the Rorschach as an unstructured stimulus situation, since some of the most important cornerstones of Rorschach analysis, such as movement and color reactions, reflect the process of imposing structure by the perceiver on the ambiguous aspects of the stimulus material.

In 1949² the author experimented with predictions from Rorschach protocols of perceptual judgments of a falling object both within a frame of reference and with a much reduced frame of reference.

A series of 36 cards were shown to each of 24 undergraduate students under two conditions. On each card the picture (in silhouette) of a man tied on a chair had been printed. Each succeeding picture showed the chair

tilted backward an additional half degree. Under the first condition the pictures, each printed on a white 8½ x 11 cardboard, were shown 15 inches from the subject's face, exposed one at a time, with the subject's head fixed in a straight clamp. The subject's task was to say "stop," when he felt that that picture was exposed in which the man was seen as just starting to fall over backward.

The same judgment had to be made again with the subject viewing the whole sequence of 36 positions at one time, arranged consecutively on a large cardboard. In this way it was felt that a framework for judging was introduced.

Two judgments were taken under condition 1, one hour apart. The product moment correlation was +.82. In a repetition of the perceptual part of this experiment at the College of the City of New York with 40 subjects, the correlation for two judgments taken four weeks apart was +.94. The correlation for the second condition, (administered twice in the second experiment) when all positions of the figure were simultaneously exposed, was +.83. All correlations were significant.

In terms of Rorschach's theory (14) it was felt that Rorschach signs concerning empathic involvement would correlate with degree of movement permitted the silhouetted figure. Accordingly a chi-square 2x2 contingency table showed that the probability of the relationship of more tilt³ to intra-tensiveness (M larger than C), and of less tilt to extra-tensiveness (C larger than M) was better than chance at the 1% level when judgment of the tilting figure under the first condition was considered.

The contingency coefficient here is +.59 with a P.E. of .109. On the other hand these Rorschach categories bore no relationship to judgment of falling under the second condition of the ex-

² This work was carried out in the Graduate Psychology Department of New York University. The Department generously supplied the funds for building the apparatus.

³ Using the Mean of judgments as the cut-off point.

periment, when a full framework of all tilting pictures was simultaneously available.

The mean in degree of judgment under the first condition for the New York University students was 11 seconds, with a S.D. of 4.47. For the second condition the mean was 18.66 seconds with a S.D. of 6.18. The difference between the means is significant at better than the 1% level.

In the repetition of the experiment at C.C.N.Y. the mean for the first condition was 11.60, S.D. 4.39. This mean did not differ significantly from the N.Y.U. group.

The mean for the second condition here was 15.42, the S.D. 4.30. The probability of this mean being significantly different from that of the N.Y.U. group is rated at the 20%-30% level. The two C.C.N.Y. means are significantly different from each other beyond the 1% level.

Thus the two conditions of judgment of tilt apparently reflect consistent differences in the nature of the judgment situation. In one, judgment must be made on the basis of reduced cues, in the other a whole array of other tilting positions is visible and thus the observer has a consistent frame of reference before him. Under the first condition the "Anhaltungspunkte" would appear to be primarily subjective (13) and thus much more akin to a situation without objective structure. In the second we have a much more narrowly defined situation, with a great array of cues for judging relative position.

What is of interest here is that the relation to Rorschach variables of the same perceptual judgment is significant if the judgment occurs under less structured conditions, but is without significance when the judgment is made under relatively more structured conditions.

Thus we have a situation where the Rorschach predicts behavior under unstructured conditions but not when the situation becomes more organized.

This in some measure would seem

to approximate the dilemma that clinicians so often come across (5, 7) where a "psychotic" record obtained within a mental institution reflects the psychotic behavior of the patient, while a similarly "psychotic" record taken from a non-hospitalized individual does not. The "validity" of the Rorschach interpretation in the first instance might possibly arise out of the equivalence that the Rorschach stimulus situation and the environment have for the patient under consideration. To the psychotic patient the social orderedness of things is not available. Each real life stimulus situation requires a new integration and new appraisal because of his difficulty in perceiving it in a well ordered socially standardized manner. Thus his manner of approach to integration on the Rorschach may very likely reflect in some measure what he also does in real life. However, where the individual perceives his environment in terms of a socially determined structure, this equivalence would diminish, depending on the degree to which his perception of the everyday world is socially integrated. These considerations suggest that the easy transition from behavior in one area to predicting behavior in another be checked by a thorough evaluation of how structured the world is for the person under examination.

Hertzman and Pearce in their highly penetrating paper on the personal meaning of the human movement response (4) and also Kornreich (8) and to some extent Wittenborn (19) have pointed out that prediction from Rorschach data to behavior cannot be univariant and must take cognizance of the structure of the individual's life surroundings and his reactions to it in order to be most meaningful. We must know something about an individual's way of structuring reality before we can readily assume a parallelism that would enable us to jump from behavior on an unstructured task to behavior that occurs under conditions that have structure and

also impose a greater degree of reality consideration.

The problem entailed in making such inferences has been passed over for too long by simply speaking of "potentials" (7) when face validity was evidently non-existent. Thus it may be that Rorschach performance rather than being directly related to social behavior reflects behavior at the levels of phantasy and feeling far removed from "reality" considerations, comparable to the primary process of Freud (10). As such, they may have importance for understanding the primitive and magical nature of feelings behind our logical and socialized exterior. However, unbridled illogical construction on the Rorschach may not permit inference about psychosis simply because psychotics show such construction. It might denote that for others, besides psychotics, the Rorschach permits a free flow of subjective "illogical structuring"; that for a study of primitive and unsocialized feelings the Rorschach may have much potential; and that for the psychotic there is no testing between phantasy and real life. However, the latter conclusion may not be obtainable from the Rorschach data alone (8) unless something is known about the individual's life experience.

Thus, the suggestion put forth here is that structure and unstructure are characteristics of different levels of behavior. That is, because the Rorschach is different as a stimulus situation from other socially-learned-about stimulus situations, it elicits behavior at a different level of organization. Lindner's notion (10) of the correspondence of Rorschach response with the dream fits this view. It would mean that Rorschach data and interpersonal behavioral data are data from different levels of behavioral organization and therefore are not strictly comparable though they may supplement each other in rounding out our understanding of an individual.

This view would explain why Rorschach data predicts social behavior

for some and not for others and might resolve the aforementioned dilemma for the "psychotic" record predicting behavior inside a mental hospital but not necessarily outside one. It is suggested that when social behavior occurs at a level of organization divorced from the usual reality considerations we then get a coincidence (isomorphism) of the data of Rorschach behavior with the data of social behavior. It is when this isomorphism pulls apart, that is, when the behavior becomes socialized, (i.e., determined by reality considerations) that we cannot any more make simple inferences of direct relationships. It is in the latter situation that the data from the level of the Rorschach response can be used to supplement our understanding of the total individual by furnishing data about his more "primary" processes.

Such data then can be used to understand an individual through its integration within the context of what we know of his real life space and real actions. It could not be used to predict behavior by simply going from the Rorschach level to the level of social behavior. Schneirla's (18) conceptualization of higher levels of organization as derivative of lower levels, whose organization is however not completely explainable by or reducible to these lower levels is germane to such an approach as outlined here.

This also applies to Rorschach evaluations of specific attributes. A person might give human movement responses on the test without ever showing capacity for empathetic involvement in real life. True, the test points out a "potential," but what does that mean if an individual's life situation, as well as his perception of his life environment are such that the circumstances for its appearance are nil?

As an example of this, we find that in a level of aspiration experiment (3) in which time estimates of achievement were made in an atmosphere of unreality because true time reference points were absent, a high

relationship between level of aspiration performance and Rorschach indicators of unreality were achieved. However, whether these signs predict the subject's true "unreality" behavior would seem to depend on how closely the level of aspiration test situation approximates real life situations for the particular individual under consideration.

SUMMARY

An attempt is made to draw attention to the unstructured nature of the stimulus situation provided by the Rorschach test, and the meaning that this unstructured condition may have for test interpretation. An experiment is discussed where Rorschach performance predicted behavior for an unstructured situation but not a structured one. Therefore, it is suggested that care must be used before behavior elicited under unstructured situations is utilized to predict behavior occurring within a structured environment. In going from test to real life we may be operating at different levels of behavior organization, and a simple juxtaposition of one to the other would depend on estimating how closely the level of behavior tapped by the test corresponds to the level of behavior in his life space under conditions of more structured and greater reality requirements.

A more thorough self-appraisal here by clinicians may not only lead to further clarification of the nature of the Rorschach test, but also to a more valid understanding of the nature of the test responses and therefore also of their intra-personal meaning.

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The Development of the Rorschach Test in Japan¹

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In 1925, the Rorschach test was introduced for the first time into Japan by Dr. Y. Uchida, who is known as the author of the 'Uchida-Kraepelin Performance Test.' We find a brief introduction to this test described by Dr. Uchida and colleagues in the "Japanese Educational Psychological Research" (Vol. 5, 1930). In this paper they referred to a relation between Rorschach's *Erlebnistypus* and Kretschmer's typology. Then from 1930 to 1932 Dr. T. Okada (Department of Psychiatry, Kyoto Univ.) wrote five articles in succession on the Rorschach test in the "Neurologia" (Vol. 32, No. 4, No. 5; Vol. 35, No. 2, No. 3). In these articles he described Rorschach's "Psychodiagnostik" in detail and suggested his own scoring system.

But after his, no research of interest to clinical practitioners was published. This might be because there were limitations in the clinical effectiveness of the Rorschach test so long as it adhered to Rorschach's original interpretation. Of course Rorschach's gifted intuition was very excellent, but use of his method had come to a standstill. This test was born in Switzerland, but we may say that it was after all developed in America, especially by Drs. S. J. Beck and B. Klopfer, and brought by them to its present-day prosperity.

When the Rorschach test as developed in America was introduced, psychologists in Japan became interested

in it. Prof. H. Motoaki (Department of Psychology, Waseda Univ.) was the first to generalize this test. About 1941 he was still examining the 'Psychodiagnostik,' but later he adopted Beck's system and further took in Klopfer's movement categories. In 1952 he published his "Manual of Clinical Diagnostic Tests of Personality," a most popular Rorschach text book in Japan. He also devised a modified series of inkblots that consisted of eight cards: the "Waseda Modified Rorschach."

Dr. R. Satake (Kanazawa Classification Office of Juvenile Delinquency) was the first to introduce the group-method of this test in this country. Now he is trying the Sodium Amytal Rorschach (SAR) to make clinical diagnosis more effective. Meanwhile, Dr. G. Nagasaka (Department of Psychiatry, Osaka Univ.) began to study this test intensively from 1945. At first he followed Klopfer's system, but afterward developed his own original ideas and constructed his so-called "Dynamic Tabulation Method." This method is a new approach to sequence analysis and is useful in the clinical field. Now he is engaged in systematic research with many collaborators. This group has already produced forty papers since 1947.

Prof. H. Kodama (Child Research Institute, Japan Woman's Univ.) became interested in this test after World War II. From the beginning he planned large-scale normative studies and seven years have already passed since he started. The definitive norms of the Rorschach responses in Japan are expected from his researches. He has used more than 4,000 subjects from three to eight years old who represent various socio-economic levels.

Recently, Mr. E. Murakami

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(Department of Psychiatry, Nagoya Univ.) influenced by Dr. J. DeVos, who visited this department several years ago, took interest in content analysis and is now working on it. More recently, Prof. T. Imura (Department of Psychiatry, Nihon Univ.) and his pupils have begun studies on clinical applications of the Z-Test.

Thus, research on the Rorschach test in Japan has prospered year by year. So the clinical psychologists and the psychiatrists of the psychiatric department of hospitals, the Classification Office of Juvenile Delinquency, Child Guidance Clinic, and Mental Hygiene Clinic have come to be more or less interested in this test. In Japan the most favorite of the projective methods are the Rorschach and TAT, but the SCT, Szondi, Picture Frustration Test and Bender-Gestalt are also used.

The numbers of the papers (on the Rorschach) read in the annual meetings of the representative learned societies in Japan are as follows:

	Japanese Psychological Association	Japanese Association of Psychiatry and Neurology
1950.....	1	1
1951.....	3	2
1952.....	8	1
1953.....	5	4
1954.....	11	2
1955.....	12	3
1956.....	23	6
1957.....	1	5

Text books or introductory manuals of the Rorschach test in Japan are as follows:

H. Motoaki: *Manual of clinical diagnostic tests of personality*. Tokyo: Kaneko Book Co., 1952.

H. Kodama: A normative study of Rorschach responses in Japanese. *Psychology Series*, 7, II. Tokyo: Nakayama Book Co., 1953.

R. Satake: *The Rorschach test. Abnormal Psychology Series*, Part 1, B2. Tokyo: Misuzu Book Co., 1954.

Y. Kataguchi: *The psychodiagnostic technique (Shinri-shindan-ho). The Rorschach*

technique. Tokyo: Maki Book Co., 1956. (This book was reviewed by Dr. B. R. Forer in this journal, 1956, 20, No. 4.)

H. Motoaki: *Manual of group method of the Rorschach test*. Tokyo: Kaneko Book Co., 1957.

The bibliography of Rorschach articles published in Japanese journals is as follows:

Psychiatria et Neurologia Japonica

T. Okada: Experimentelle Studie über die Rorschach'sche "Psychodiagnostik." 1930, 32, No. 5, 43-55.

T. Okada: Über die Einteilung der Reaktionen und Analyse der abnormen Aussage beim Rorschach'schen Formdeutversuch in der Psychodiagnostik. 1932, 35, No. 2, 39-82.

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S. Tsuji, K. Miki et al: Some investigations on the significance of children's ranking of their inmates by preference. 1954, 2, No. 1, 18-29 (English abstract).

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J. Mental Health

Y. Kataguchi and H. Dendo: A study of the personality of the traumatic neurosis by

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Alleged Rorschach Anxiety Indices in Children

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Based on a review of the literature, Eichler (3) found that there are some 15 Rorschach variables which are commonly regarded by projective test experts as anxiety indicators. It is not suggested that these indices necessarily hold for child populations, or that we should expect them to. On the contrary, it has been pointed out by Halpern (4) and Paulsen (5) that pathological signs need not be common to adults and children because of the development aspect of the child's responses. Nevertheless, we have not yet ascertained experimentally that such commonality does not exist. The purpose of this paper is to present experimental data bearing on the point. These data consist of (a) comparisons between samples of normal children and clinic patients on nine of the variables listed by Eichler (3), and on seven other factors related to them, and (b) the relationships between variables and scores on the Children's Manifest Anxiety Scale (CMAS) for the clinic sample. The CMAS is a 42-item true-false verbal inventory patterned after the Taylor Anxiety Scale. Its development has been described elsewhere (2). In the clinic administration, each item was read by the psychologist to the child, who indicated his responses on a response sheet. The CMAS has been found to differentiate normal and disturbed children and to be related to psychiatrists' ratings of severity of symptoms for disturbed children (6).

SAMPLE AND RESULTS

The sample of disturbed children consisted of 39 unselected cases of the age range 8.08—13.25 years, who

were seen diagnostically at a community guidance clinic in Chicago. The mean age was 10.70 years with an *SD* of 1.42. There were thirty boys and nine girls, the usual ratio at this clinic. The average IQ based on 34 cases for whom scores were available was 103.62 with an *SD* of 16.61. The mean score on the CMAS for all 39 cases was 20.49 with an *SD* of 7.80, as contrasted with a mean of 13.23 for 322 Chicago school children tested by Rynerson and Levitt (6) and a mean of 17.13 for 386 Iowa school children examined by Castaneda, McCandless and Palermo (2).

The data for the normal sample were taken from the report of Thetford, Molish and Beck (8). The 155 children furnishing these data were all from Chicago public schools, and were described as "free from overt behavior problems discernible to their teachers," of "average academic achievement," and "within normal range" on one of three standard intelligence tests. The age range was 6 to 17.5 years with a mean of 10.75 and an *SD* of 3.17. There were 83 boys and 72 girls in the sample.

The samples are satisfactorily equated for mean age, and very probably for intelligence. The variabilities of age are different, as are the sex ratios. The possible effects of these differences on results will be discussed later.

Nine of the indices mentioned by Eichler (3) are reported for the normal sample. These are: R, W, P, Hd, M, Dd, A%, Sum Y, and Sum C. Data for the related factors, W%, Y, FY, YF, C, FC, and CF, are also given. Except for R, W, W%, A% and P, distributions tended to be skewed for one or both samples. Differences between groups on these five variables were analyzed by *t*-tests.

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TABLE I—Comparison of Normal and Disturbed Children on Symmetrically Distributed Variables

Variable	Sample Mean		<i>t</i>	Variance Ratio
	Normal	Clinic		
R.....	27.15	25.82	0.58	1.26
W.....	3.14	7.26	5.24**	1.99*
W%.....	12.55	30.77	6.07**	2.36**
A%.....	47.95	42.03	2.15*	1.16
P.....	4.54	5.00	1.67	1.91*

* Significant beyond the .05 level.

** Significant beyond the .01 level.

TABLE II—Comparison of Normal and Disturbed Children on Asymmetrically Distributed Variables

Variable	Dichotomized at	Sample Scoring	Chi-square	P
Hd.....	median	normal	4.12	.05
Dd.....	2.5	normal	3.74	.054
M.....	median	clinic	21.75	<.01
Sum C.....	median	clinic	4.32	.04
Sum Y.....	median	clinic	4.30	.04
C.....	0.5	normal	0.66	ns
FC.....	0.5	---	0.00	ns
CF.....	0.5	clinic	10.45	<.01
Y.....	0.5	normal	2.99	ns
FY.....	0.5	---	0.00	ns
YF.....	0.5	clinic	16.09	<.01

Variance ratios were also computed. The skewed distributions were artificially dichotomized and chi-squares were computed. The results for the five, symmetrically distributed variables are shown in Table I.

The results of the analyses of the eleven asymmetrically distributed variables are shown in Table II.

Nine of the 16 analyses of average frequency or percentage are significant at the .05 level or beyond. The variables are W, W%, A%, Hd, M, Sum C, Sum Y, CF and YF. The chi-square for Dd falls short of the .05 level by only .004. The clinic sample is higher on all of these factors except A%, Hd and Dd. Variance ratios for W, W% and P also reach at least the .05 level. The normal group shows more variability in P and the clinic sample in the others.

The correlations between most of the Rorschach indices listed by Eichler and scores on the CMAS for the clinic sample are given in Table III. Relationships were analyzed us-

ing the Pearson *r* for ten variables which were symmetrically distributed. Three factors were analyzed by dichotomizing the distribution of CMAS scores based on a logical split of the Rorschach variable, and computing *t*-tests. One analysis is a *F*-ratio based on a trichotomous split.

None of the analyses of Table III is significant, or even approaches significance. In fact, no *P* value is as low as .20.

DISCUSSION AND CONCLUSIONS

The consensus holds that anxiety indicators are low scorings on R, W, P, M and Sum C, and high scorings on Hd, Dd, A and Sum Y. The results in Tables I and II are almost unanimously opposite to the predicted direction. The clinic group scores higher on W, M and Sum C, and lower on Hd, Dd, and A%. There is no difference in R. Only Sum Y, probably the most widely accepted anxiety sign, is in the predicted direction.

Since the samples differ with re-

TABLE III—Relationships Between Rorschach Indices and the Children's Manifest Anxiety Scale for the Clinic Sample ($N = 39$)

Symmetrically Distributed Variables		r
R.....		.14
W.....		.11
W%.....		.02
M.....		.11
Sum C.....		.14
P.....		-.08
A%.....		.16
F.....		.11
A.....		.16
M%.....		.01
P%.....		-.09
Asymmetrically Distributed Variables		t
Hd.....		0.88
Sum Y.....		0.12
Dd.....		1.49*
Ad.....		0.18
An.....		0.17

* An F -ratio based on a trichotomous breakdown of this variable.

spect to proportions of boys and girls, and in variability of age, it is possible that these circumstances have affected the results. Data as a function of age are reported by Thetford et al. (8). No age differences in the normal sample were found for Y, YF, C, FC, W%, A%, Hd and Dd. Frequencies were roughly positively correlated with age for R, P, and FY, so that the net effect of the absence of the highest and lowest age groups in the clinic sample would be nil. Frequencies tend to be peaked at the higher age groups with no other differences for W, M, CF, Sum C and Sum Y. Hence we would expect that the lack of children older than 13 years in the clinic sample would result in reduced mean frequencies for these variables. Since the clinic group actually exceeds the normal for all of the variables, we must conclude that age was not a factor influencing results appreciably.

Unfortunately, Thetford et al. (8) do not present comparative data by sexes. Accounts of sex differences in the literature such as those of Ames et al. (1) and Stavrianos (7) are

somewhat in conflict. There seems to be general agreement that boys score higher on R and W%. This is also true of the clinic sample, although the numbers of cases of each sex are too small for reliable statistical analysis. The Ames et al. data are derived from a high IQ group² which is not comparable to the samples tested here. However, in the absence of more appropriate data, we will use the Ames study as a guide in determining sex differences in normal samples. Then, by algebraically summing the expectation in the Thetford sample with the sex differences found in the clinic sample, we find that the net will explain differences in W%, and CF. Differences or lack of differences in M, Sum C, Y, A%, Dd, and R are contrary to expectation. In general, the conclusion is that the sex factor does not appear to have markedly affected the comparison.

Even if we hypothesize the operation of some uncontrolled variable affecting results, it is certainly unlikely that it could be momentous enough to turn significantly larger averages of the clinic group into significantly larger averages for the normals. At best there would be no differences. Differences in variability such as were found for W, W%, and P are usually difficult to interpret unless they are encompassed by some theory.

In general, the conclusion must be that none of the alleged anxiety indicators studied here holds up with the exception of Sum Y, the total of the unweighted shading responses. This conclusion is partly supported by the data of Table III which indicate that none of the alleged indices is related to an independent measure of anxiety in the clinic sample. When viewed alone, however, the absence of relationship could not be considered as conclusive. The CMAS is designed

² The mean IQ is not given, but the frequency distribution indicates that it is at least 120.

to measure manifest anxiety, while the Rorschach is presumed to tap a deeper level. The lack of correlation is therefore not completely surprising.

The possibility that many of the conventional adult anxiety indices are reversed in children may sound outlandish, but should not be discarded hastily. The results of this study suggest that such a notion ought to be afforded further experimental investigation.

SUMMARY

A group of child clinic patients was compared with a group of normal children on a series of Rorschach variables commonly regarded as anxiety indices in adults. Of nine significant differences, only the frequency of shading responses was in the predicted direction. Within the clinic group, no variable was found to be related to scores on the Children's Manifest Anxiety Scale. Possible effects of differential sex ratios and variabilities of age between the two samples were discussed, and it was determined that these did not influence results significantly. It was concluded that as far as the present data go, only frequency of shading responses can be consid-

ered to be an anxiety indicator in children.

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Quantification of the Bender-Gestalt Recall: A Pilot Study¹

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INTRODUCTION

While the Bender-Gestalt test was originally devised to investigate disturbances in visual-motor performance resulting from organic brain disease, it has been found to be useful in the study of a variety of personality disturbances of a predominantly functional nature. With new applications of the test, modifications in the standard administration technique have been introduced. Of these, the recall procedure has provoked the most interest and is now frequently used to supplement the material obtained from the standard procedure. However, in rather marked contrast to the effort devoted to quantification of the original copying procedure (3, 6, 7, 10, 11), comparatively few studies are available which attempt to quantify the recall in a similar fashion. In addition, even the procedure used in obtaining the recall has been subject to wide variation. As Reznikoff and Olin (12) have pointed out, this failure to standardize the recall administration makes inter-study comparisons difficult and of doubtful validity.

A survey of the literature relating generally to the recall procedure reveals that the major interest has been in comparing the number of designs recalled by one group with the recall of another. For the most part, interest has been focussed on the qualitative aspects of the reproductions only to the extent of establishing criteria for scoring a design as remembered. Moreover, the criteria utilized varies considerably from one investigator to another. For example, Bossom (4)

scores one point for a "correctly completed" reproduction and zero for all others; Tolor (17) counts both "whole and part figures" in his measurement of the recall; and Gobetz (6), along with a number of other investigators, provides no published criteria for measuring the recall. However, despite the differences currently existing both in the measurement and administration of the recall, a number of relatively consistent findings emerge from the available studies. These findings, in a general way, suggest that organic patients are poorest in recall with schizophrenics, neurotics and normals coming next in this order. With the aim of improving the diagnostic usefulness of the recall procedure, the purpose of the present research was to investigate a more explicit and detailed method of quantifying the essentially qualitative recall data. It was felt that a scoring system utilized for the recall productions should be equally applicable to the copied designs so that direct comparison could be made between these two phases of the test.

Of the published investigations dealing with the recall, four are specifically concerned with quantification. Arazi (2) lists eight deviations occurring in the recall, five of which she feels are comparatively minor distortions and are not used in her group comparisons. Employing the remaining three indices, involving major distortions of the original stimuli, she was able to obtain significant differences between schizophrenics and normals. These three indicators, however, are only a very small portion of the deviations commonly found in recall productions. Moreover, they rarely and sometimes never occur in the copied productions, thus limiting their usefulness for copy-recall comparisons.

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Shapiro, et al. (14), using a modified and reduced series of Bender-Gestalt designs in their geriatric studies, developed a scoring method consisting of five levels of accuracy for each design reproduction whether occurring on the standard copy phase or on the recall. They found that organic subjects obtained poorer scores on both the copy and recall than a control group of non-organic subjects. While this investigation demonstrated rather clearly the usefulness of recall quantification, and provided adequate criteria for scoring protocols, the difference in stimuli together with the advanced age of his population prevent any direct transference of his system to the standard stimuli and younger age groups.

Gobetz (6) developed an extended series of indices most of which was applicable to both the standard and recall procedures. In comparison of neurotics and normals, however, he found no difference in recall which held up under cross validation. While his scoring method contains a number of unique features which appear to be potentially of use in evaluating both the recall and the copy phase, little data is presented which might serve to clarify the value of his specific indicators with other groups of subjects, e.g., organics and schizophrenics. Furthermore, a number of his indices are not applicable to both the recall and the copy phases, and thus cannot be used for such comparisons.

The system devised by Peek and Quast (11) is also designed to provide a means of scoring both the copy and recall phases using one basic series of indices. Their method includes a number of deviations not found in the above scoring procedures in addition to several indicators which are predominantly encountered in the recall phase alone. Since these investigators have thus far presented no data using their system with either the recall or copy procedures, the value of their method remains uncer-

tain, despite the fact that many of the indices appear to have considerable face validity.

Though not specifically concerned with quantification of the recall, Pascal and Suttell (10) have developed a scoring system for use with the copy phase which has been utilized in a large number of studies. The results of these investigations indicate that it is capable of demonstrating comparatively consistent group differences when the copy protocols are scored according to their detailed criteria. Parker (8) found that brain-injured subjects scored higher, indicating worse performance, than did non brain-injured subjects; Robinson (13) found that paretics scored higher than did schizophrenics; Addington (1), Sonder (15), and Suttell and Pascal (16) have found that schizophrenics score higher than do normal controls; Bowland and Deabler (5), using a group administration of the Bender-Gestalt, found that organics scored highest with schizophrenics, neurotics and normals coming next, in this order of deviation from the original stimuli. Other investigations using the Pascal and Suttell system tend to concur on the nature and direction of these group differences.

Considering the demonstrated ability of the Pascal and Suttell procedure (hereafter referred to as the P & S system) to differentiate a variety of groups of subjects, it was felt that this system might provide a valuable basis for developing a comparable scoring system for the recall; a system which, hopefully, could then be used as a companion method with the procedure now used solely for the copy phase. Informal analysis of a large number of recall protocols revealed that the specific indices included in the P & S system were for the most part scorable for the recall. In addition, the recall was found to contain an insignificant number of deviations which could not readily be included in the P & S system.

Briefly, the P & S system consists of

105 scorable deviations of which seven deal with general factors related to the placement of the designs on the page, while 98 are concerned with specific deviations from the standard reproductions of Designs 1 through 8. Each item is weighted in accordance with its relative frequency in the standardization population with the summed weights of the 105 items constituting the 'Raw Score' for the particular protocol. It is, of course, possible to obtain total scores for each of the designs considered independently in the same manner. For subjects having at least one year of high school and within the age range of 15 to 50 the Raw Score may be converted into a standard, or 'z-score.' The mean of the z-score distribution is 50 and the standard deviation is 10. This permits ready comparison of the individual protocol with the non-patient standardization group with regard to the degree of drawing deviation shown. A z-score of 72 or over suggests, according to the authors, that the subject is "in need of psychiatric help." Extensive scoring criteria are provided in the authors' text together with a number of practice protocols; this makes it a relatively simple system to learn to use competently. Only Peek and Quast have similar, but far fewer examples to illustrate their scoring criteria. The presence of these specific illustrative criteria in the P & S system is an additional reason for its selection as a procedure for recall quantification.

USE OF THE P & S SYSTEM IN EVALUATING THE RECALL

A number of theoretical and practical problems arise when the attempt is made to use a system devised and standardized on the copy phase with the recall phase. Possibly the major consideration involves the justification of transferring deviation weightings, ranging from '1' to '8', since these weights were derived from a comparison of patient and non-patient frequencies on the copy phase

and not on the recall. On the surface, it is quite possible that specific deviations occurring on the recall would occur with differing frequencies and, therefore, should be weighted differently in computing a recall score. Scoring on the basis of the copy weights might, thus, obscure real differences which exist between groups rather than clarifying them.

Another problem concerns the fact that certain deviations found in the recall productions were not found by P & S in their analysis of the copy and thus no provision was made for their scoring. Examples of this would be the reversal of slant in the eleven rows of Design 2, the reversal of apex in the vertical rows of Design 3, and the closure of the three sided square of Design 4. Analysis of a large number of recall protocols, however, revealed that deviations of this sort occurred very infrequently. Because of this, and since the inclusion of deviations of this sort would obscure copy-recall comparisons, it was decided to omit them from the present recall quantification.

The problem of contaminated and additional productions is related to the above difficulties in transferring the P & S copy system to the recall, since this type of deviation does not occur in the copy phase. By 'contaminated' responses is meant a fusion or combining of two or more designs, or design parts, into one final production. The most commonly found contamination is the joining of a portion of Design A with a portion of Design 4, resulting in a distorted reproduction resembling both A and 4. While this particular deviation is not specifically encountered in the copy, it was decided that it was closely related to the P & S scoring category of 'distortion,' and that it could be scored under this category without unduly violating this concept. In the above example of contamination, the problem of whether to score the production as a distortion of Design A or Design 4 was handled by scoring

'distortion' for the design which it most resembled as determined by the position and relative prominence of the elements. In practice, this judgment was made without significant ambiguity. With regard to the 'recall' of designs which bear no apparent resemblance to any of the original stimuli, the so called 'additional' productions, which occur very infrequently, the decision was made to eliminate them from any scoring consideration.

One additional problem arises in so using the P & S scoring system, namely, Design A was not quantified by the authors. The reasons for this remain obscure since P & S make no mention of the basis for omission of this design in either the major text, or in a previous publication dealing with the system by Pascal (9). Because all other attempts at quantification of the copy phase have scored Design A, and since all efforts at measuring the recall phase have considered Design A as an integral part of the total protocol, it was deemed advisable to score this design along with the eight others. To do this it might have been possible to utilize available scoring systems obtained from other investigators. This was felt to be undesirable, however, as it would introduce scoring categories which would be quite divergent from those found in the P & S scoring of the other eight designs.

Analysis of the 98 specific scored deviations reveals a comparatively large overlap of scoring categories from design to design. For example, the category 'Second Attempt' is scored in the same manner for each of the eight designs. Of the total of 98 items, only 39 different categories are used, and of these, only 19 are specific to a single design, while three are encountered on each design. Moreover, designs containing common elements, dots for example, have certain scoring categories in common, referring to the elements which the several designs have in common. Considering this extensive overlap of scor-

ing categories among the various designs, it was felt that it would be consistent with the P & S system to develop a series of indices for Design A reflecting the common elements already existing within the system. Since Design A has most in common with Design 4 with respect to the nature of the elements and their interrelationship, Design 4 was chosen as the basic model from which to develop a scoring system for Design A. In addition to criteria and specific items obtained from Design 4, however, several indices in the final series came from Designs 7 and 8, and one was suggested by the 'Configuration' series of indices.

A total of 19 indices were finally developed for the scoring of Design A. These are listed below together with their respective weights; that is, those weights which were given to similar deviations when they occurred on the other designs from which the particular Design A item was taken. Perusal of a number of recall protocols suggested that these 19 indices were sufficiently extensive to handle all of the deviations found in the recall of Design A. In the interests of brevity, criteria for scoring each of the indices will be given only for those items in which a significant modification of the P & S criteria has been made to relate it specifically to Design A. The notation '4, 2' following the number in parenthesis, which is the weighting of the deviation, refers to that scoring item explained in the P & S manual under Design 4, Item 2, and so forth. The scoring indices for Design A are as follows:

1. *Asymmetrical circle* (3)

- a. One diameter is $\frac{2}{3}$ or less the length of the other; measurement to be taken at the longest and shortest diameters of the circle respectively.
- b. One half of the circle is reproduced in a manner significantly different from the other half.
- c. Angles are present in the circle.

2. *Asymmetrical square* (3)

- a. One angle in the square is approx-

- imately twice that of another.
- b. One of the lines is $2/3$ or less of another.
 - c. One half of the square is reproduced in a manner significantly different from the other half.
3. *Break in circle* (4) '4,2'
 4. *Ends not joined* (8)
 - a. When two or more gaps in the square occur of $1/16$ th inch or more.
 - b. When one gap occurs which is $1/8$ th inch or more; if this occurs at the juncture of square and circle, an additional gap of $1/16$ th inch is needed.
 5. *Square not centered* (1) '4,3'
 6. *Square not joined to circle* (8) '4,5'
 7. *Square overlapping* (8) '4,5'
 8. *Angles extra in square* (3) '7,2'
 9. *Extra scattered dots or dashes* (3) '7,4'
 10. *Double lines* (1 ea.) '7,5'
 11. *Guide lines* (2) '4,10'
 12. *Tremor* (4) '4,8'
 13. *Workover* (2) '8,9'
 14. *Square rotation* (3)
The square is rotated approximately 45° thereby appearing to 'rest' on one side.
 15. *Second attempt* (3 ea.) '4,11'
 16. *Rotation* (8)
The square is rotated in such a manner that the resulting configuration of square and circle has been rotated 45° or more.
 17. *Distortion* (8)
 - a. When the design has been contaminated with another.
 - b. When there is other marked distortion of the original stimulus as, for example, a triangle substituted for the square.
 18. *Design missing* (8)
 - a. When one of the two figures is missing.
 - b. When at least $1/3$ rd of either the circle or the square is missing.
 19. *Relative size* (8)
 - a. When the largest diameter of the square is twice the length of the largest diameter of the circle, and vice versa.
 - b. When the apparent area of one part is approximately $1/4$ the area of the other.

While the use of weights for each of the nineteen indices is, of course, largely arbitrary, it was felt that they corresponded closely to the weights

given comparable deviations on the other designs. In addition, it may be noted that in initially determining the weights applied to the copy phase indices, P & S gave the same weighting to the same item on whichever design it was encountered. Thus the item 'Rotation,' which is scored for all eight designs in the P & S system, was given a weighting of '8', whereas the proportion by which patients differed from non-patients in the standardization population varied considerably depending upon the particular design in which rotation was scored. These features of the original weighting procedure were felt to mitigate in some measure the apparent arbitrary character of the above assignment of weights to Design A. As with the other designs, the recall score for Design A is obtained by totaling the weights of all indices found to be present in the reproduction of the design. The higher the resulting score the less accurately has the design been recalled.

SUBJECTS AND PROCEDURE

Two of the subject groups used in this investigation were described in a previous study reported by the authors (12) dealing with the number of designs recalled. These two groups consisted of 33 organic patients from the Neurological Institute of New York, and 50 schizophrenic patients hospitalized at the Institute of Living. No organic patient had a concomitant functional diagnosis and all of the schizophrenics were free of any organic pathology. The patients ranged between 18 and 49 years of age and had obtained full scale Wechsler IQ's ranging from 80 to 128. While the mean age of the schizophrenic group was significantly above that of the organic group, ages 37 and 31 respectively, the correlations between age and the number of figures recalled was not significant. The schizophrenics had a somewhat higher mean IQ than did the organics, 107.5

and 100.2 respectively, however this difference was not statistically significant.

In order to obtain normative data related to recall quantification, a third group of subjects was included in the present study. This consisted of 33 student nurses who were in the final phases of training at the Institute of Living. All of the subjects but one were between 19 and 23 years of age. While no measures of intellectual functioning were available for this group, it was assumed that the group as a whole was of average to bright normal intelligence. Because the group of nurses differed widely from the other two groups in such factors as sex composition, occupation, age, and possibly IQ, it was felt that this group was inadequate as a rigorous control for the patient groups. The comparison data to be presented, therefore, must be considered as merely suggesting trends which must be verified with other more suitable control populations before definite conclusions can be drawn.

The two patient groups were given the Bender-Gestalt copy and immediate recall procedures as a routine part of their psychological evaluations. The nurses were given the same tests on a voluntary basis at the close of their training. All of the copy and recall productions were scored by the senior author using the P & S scoring system for the copy phase and the

present adaptation of it for the recall. In addition, the copied production of Design A was also scored according to the procedure outlined above.

RESULTS

Reliability

In order to determine the reliability of the scoring procedures the records of the two patient groups were re-scored after several weeks had elapsed. The correlations for combined patient groups between the original scoring and the re-scoring for the copy and recall phases when the P & S indices for Designs 1 through 8 were totaled were .93 and .84 respectively. When Design A was considered separately, the respective correlations were .81 for the copy phase and .87 for the recall.

Accuracy of Recall of Organic, Schizophrenic and Normal Groups

Table I presents the mean qualitative scores of the organic and schizophrenic patients for each of the nine designs treated individually. The *t* test was used to determine the significance of the mean differences. As can be seen, the organics' reproductions were qualitatively inferior to the schizophrenics' on all nine designs. The differences between the groups were significant at the .10 level for Designs A, 3, 5 and 8, and at the .05 level for Design 4.

Table II presents similar compari-

TABLE I. A Comparison of the Recall Scores Obtained by the Organics and Schizophrenics for Each of the Bender Designs

Design	Percent Recalling Design		Mean Recall Score*		t	P
	Organics	Schizophrenics	Organics	Schizophrenics		
A.....	76	60	9.16	6.06	1.76	.10
1.....	58	78	4.11	3.82	.31	.80
2.....	36	70	6.67	5.17	.68	.50
3.....	27	26	9.56	5.31	1.93	.10
4.....	18	20	16.67	9.60	2.14	.05
5.....	70	58	8.00	5.27	1.68	.10
6.....	76	74	7.88	6.57	.93	.40
7.....	45	58	16.69	15.10	.53	.60
8.....	85	76	6.79	4.79	1.71	.10

* Each of the nine designs has a different maximum score.

TABLE II. A Comparison of the Recall Scores Obtained by the Organics and Normals for Each of the Bender Designs

Design	Percent Recalling Design		Mean Recall Score*		t	P
	Organics	Normals	Organics	Normals		
A.....	76	88	9.16	6.08	1.82	.10
1.....	58	85	4.11	2.92	1.15	.30
2.....	36	76	6.67	3.96	2.19	.05
3.....	27	36	9.56	7.75	.96	.40
4.....	18	21	16.67	14.14	.69	.50
5.....	70	79	8.00	4.58	2.51	.02
6.....	76	94	7.88	4.35	2.80	.01
7.....	45	85	16.69	11.21	2.16	.05
8.....	85	88	6.79	3.03	3.11	.01

* Each of the nine designs has a different maximum score.

TABLE III. A Comparison of the Recall Scores Obtained by Schizophrenics and Normals for Each of the Bender Designs

Design	Percent Recalling Design		Mean Recall Score*		t	P
	Schizophrenics	Normals	Schizophrenics	Normals		
A.....	60	88	6.06	6.08	.01	.99
1.....	78	85	3.82	2.92	1.05	.30
2.....	70	76	5.17	3.96	.83	.50
3.....	26	36	5.31	7.75	1.56	.20
4.....	20	21	9.60	14.14	1.53	.20
5.....	58	79	5.27	4.58	.52	.70
6.....	74	94	6.57	4.35	2.04	.05
7.....	58	88	15.10	11.21	1.80	.10
8.....	86	85	4.79	3.03	1.70	.10

* Each of the nine designs has a different maximum score.

son data for the organics and the normals. It can be noted that the organics' ability to reproduce the designs accurately from memory was even more inferior when contrasted with the normal group. Design A reaches the .10 level of significance, whereas Designs 2, 5, 6, 7, and 8 reach the .05 level or better. Of the nine designs the superiority of both the schizophrenics and normals over the organics was most clearly demonstrated on Designs A, 5 and 8.

Table III reveals that when the schizophrenics are compared with the normals, the differences in quality of recall are not nearly as marked or so consistently in one direction. The schizophrenics were able to reproduce Designs 3 and 4 with greater accuracy than did the normals, although the .20 level of confidence obtained indicates that this difference is insignificant. Design A was reproduced

with the same accuracy for both groups. In all, differences between the two groups at or beyond the .10 confidence level occurred on only three designs, 6, 7, and 8, with only Design 6 reaching the .05 level. In each of these three instances the normals surpassed the schizophrenics in the accuracy of their reproductions.

Indicated also in Tables I, II and III are the percentages of the three groups recalling each of the nine figures. An examination of these percentages shows that Designs 3 and 4 are clearly the most difficult figures for members of all three groups to recall while Designs 6 and 8 are among the easiest. These findings are consistent with results obtained by other investigators (4, 17). The mean number of designs recalled was 4.88 for the organics, 5.30 for the schizophrenics, and 6.52 for the normals. In this tabulation a design was consid-

ered to have been recalled if it could be scored according to the modified P & S system regardless of the accuracy with which it was reproduced. Again, these findings are similar to those obtained in a number of other studies previously cited.

Since it was felt the practice of weighting the various distortions in accordance with the P & S system, and the combining them to obtain a single score for each of the nine designs might possibly obscure some of the differences, it was decided to compare the number of times each of the total of 117 indicators was scored in the three groups. The figure 117 includes the original 98 indices for Designs 1 through 8 together with the 19 additional items for Design A alone. In addition such an analysis might reveal particular deviations in drawing which would be useful to the clinician in the absence of more formal scoring.

While this individual item analysis could be handled by a straight forward tabulation of the number of subjects in the three groups for whom a particular deviation was scored, with certain of the specific items such a procedure might lead to somewhat misleading results. This is due to the fact that a subject can receive more than one scoring for certain of the indices. For example, one of the schizophrenic subjects perseverated the number of dots on Design 1 on the copy phase, and was scored thirteen times for Item 5 of Design 1, 'Number of dots.' Another subject, an organic, was scored 6 times for the presence of 'Double line' on Design 7, Item 5 on the recall phase. Out of the total of 117 separate items, 19 were found which might be scored for a particular subject more than once; the remainder, or 98, were scorable only once. Of the 19 items, only six were found to have been scored more than once with sufficient frequency to warrant a different analysis. These six items were: 'Double line' occurring on Designs A, 6, 7 and 8; 'Num-

ber of dots' on Design 1; and 'Number of columns' on Design 2. To bring these items in line with the others in which the maximum frequency of scoring per subject was one, it was decided to score each of the six deviations as either present in the individual protocol or not present, regardless of the number of times the item occurred for the particular subject. In addition, 'Double line,' occurring on Designs A, 7 and 8 was scored separately if a double line was encountered (a) one or more times, and (b) two or more times, since examination of the obtained frequencies suggested that certain group differences might be clarified in this manner.

Table IV reports those indicators which produced differences between the groups significant at or above the .10 level of probability when the three groups were considered two at a time. The number of organic cases available had increased from 33 to 37 at the time these computations were done, and accordingly the four additional cases were included in the organic group.

Of the twenty indicators reaching the .10 level of confidence or better, ten differentiated between the organic and schizophrenic groups, and six between the organic and normal groups. Of these 16 indicators, the organics were superior in only two, the presence of 'Guide lines' and 'Second attempt' on Design 7, when compared with the schizophrenic group. Of the remaining four indicators, which discriminated between the schizophrenics and normals, two were found a greater number of times in the normal group, while two occurred considerably more often among the schizophrenic patients. It is recognized that all of the differences reported in Table IV are within chance expectation for the number of comparisons made, 117 for each pair of subject groups making a total of 351 for the three group comparisons.

Table V shows the frequencies, ex-

TABLE IV. Items on the Bender Recall Differentiating between Organics, Schizophrenics, and Normals, at or beyond the .10 Level of Confidence

Design and Item	Percent Recall Occurrence		Chi Square*	P
	Organics	Schizophrenics		
A, 10. Double line (2 or more).....	22	3	2.90	.10
A, 14. Square rotated.....	22	3	2.90	.10
4, 4. Curls.....	60	0	4.22	.05
5, 1. Asymetry.....	28	3	4.61	.05
5, 10. Workover.....	32	3	5.91	.02
6, 1. Asymetry.....	60	33	3.90	.05
7, 8. Guide lines.....	0	24	3.38	.10
7, 9. Second attempt.....	11	38	2.76	.10
8, 2. Angles extra.....	48	12	10.90	.001
8, 5. Double line (2 or more).....	24	5	4.06	.05
	Organics	Normals		
A, 19. Design missing.....	22	0	4.70	.05
5, 10. Workover.....	32	8	3.38	.10
6, 3. Point crossing.....	20	3	2.76	.10
6, 4. Curve extra.....	23	0	6.06	.02
7, 5. Double line (1 or more).....	56	24	3.49	.10
8, 5. Double line (2 or more).....	24	0	5.83	.02
	Schizophrenics	Normals		
A, 12. Tremor.....	16	43	3.54	.10
3, 5. Number of dots.....	18	83	7.33	.01
7, 9. Second attempt.....	38	3	8.51	.01
7, 8. Guide lines.....	24	0	5.84	.02

* Yates' correction for continuity was applied in all chi square computations.

TABLE V. Frequency with which Each Item on the Recall was Tabulated for Organics (O), Schizophrenics (S), and Normals (N), Expressed in Percent of Occurrence in the Designs Recalled for Each Group

Design A	O	S	N		O	S	N
1. Asym. circle	17	3	3	4. Circles	5	3	0
2. Asym. square	22	23	28	5. No. dots (1 or more).....	14	10	7
3. Break circle	0	0	0	6. Double row	5	0	0
4. Ends not join.....	9	0	0	7. Workover	14	15	14
5. Sq. not center.....	17	13	3	8. Sec. attempt	10	5	0
6. Sq. not join.....	0	0	0	9. Rotation	0	3	0
7. Sq. overlap	0	10	7	10. Des. missing	0	3	0
8. Angles extra	17	10	21	No. Recalling Design	21	39	28
9. Ext. dot scat.	9	0	3				
10. Double lines				Design 2	O	S	N
a. 1 or more	35	32	24	1. Wavy line	62	41	44
b. 2 or more	22	3	10	2. Dots or dash	15	6	8
11. Guide lines	0	3	0	3. Shape circle	77	68	56
12. Tremor	26	16	43	4. Ci. miss ext.	15	6	4
13. Workover	0	0	0	5. Ci. touch	0	0	0
14. Sq. rotation	22	3	17	6. Dev. slant	8	3	16
15. Sec. attempt	4	16	7	7. No. columns (1 or more).....	15	9	12
16. Rotation	13	10	3	8. Fig. 2 lines	0	0	0
17. Distortion	9	6	10	9. Guide lines	0	0	0
18. Relative size	0	0	0	10. Workover	8	6	0
19. Design missing	22	13	0	11. Sec. attempt	0	0	0
No. Recalling Design	23	31	29	12. Rotation	0	3	0
				13. Des. missing	8	3	0
Design 1	O	S	N	No. Recalling Design	13	34	25
1. Wavy line	29	20	21				
2. Dot dash ci.	43	31	50	Design 3	O	S	N
3. Dashes	10	0	0	1. Asymetry	60	27	67

TABLE V. (continued)

Design 3 (cont.)	O	S	N	Design 6	O	S	N
2. Dot dash ci.	60	45	67	1. Asymetry	60	33	42
3. Dashes	0	0	0	2. Angles	30	15	16
4. Circles	0	0	0	3. Pt. crossing	20	13	3
5. No. dots	60	18	83	4. Crv. extra	23	5	0
6. Extra row	0	0	8	5. Double line (1 or more)....	20	23	16
7. Blunting	0	0	0	6. Touch-up	0	0	0
8. Distortion	10	0	0	7. Tremor	37	44	42
9. Guide lines	0	0	0	8. Distortion	7	10	0
10. Workover	30	18	8	9. Guide lines	0	3	0
11. Sec. attempt	0	0	0	10. Workover	0	0	0
12. Rotation	0	9	0	11. Sec. attempt	3	10	0
13. Des. missing	50	18	17	12. Rotation	3	0	3
No. Recalling Design	10	11	12	13. Des. missing	10	5	6
				No. Recalling Design	30	39	31
Design 4	O	S	N	Design 7	O	S	N
1. Asym. curve	60	10	29	1. Ends not join	0	10	3
2. Break curve	0 ³	0	0	2. Angles extra	67	38	38
3. Crv. not cent.	40	20	43	3. Angles miss.	6	7	7
4. Curls	60	0	0	4. Ext. scatter	11	3	0
5. Not joined	0	20	0	5. Double line			
6. Crv. rotation	0	30	14	a. 1 or more.....	56	41	24
7. Touch-up	0	0	0	b. 2 or more.....	22	24	10
8. Tremor	40	20	43	6. Tremor	28	41	24
9. Distortion	40	40	57	7. Distortion	44	41	21
10. Guide lines	0	0	0	8. Guide lines	0	24	0
11. Sec. attempt	20	10	14	9. Sec. attempt	11	38	3
12. Rotation	0	10	43	10. Rotation	78	59	55
13. Des. missing	20	20	29	11. Des. missing	39	14	24
No. Recalling Design	5	10	7	No. Recalling Design	18	29	29
Design 5	O	S	N	Design 8	O	S	N
1. Asymetry	28	3	8	1. Ends not join	0	0	0
2. Dot dash ci.	68	41	61	2. Angles extra	48	12	25
3. Dashes	0	7	0	3. Angles miss.	0	0	0
4. Circles	4	3	4	4. Ext. scatter	6	2	0
5. Ext. join dot	36	55	46	5. Double line			
6. Ext. rotation	12	3	4	a. 1 or more.....	36	30	21
7. No. dots	8	7	4	b. 2 or more.....	24	5	0
8. Distortion	8	7	4	6. Tremor	36	37	32
9. Guide lines	0	0	0	7. Distortion	24	12	7
10. Workover	32	3	8	8. Guide lines	3	0	0
11. Sec. attempt	4	0	0	9. Workover	3	0	0
12. Rotation	4	0	0	10. Sec. attempt	18	14	7
13. Des. missing	12	17	8	11. Rotation	0	0	0
No. Recalling Design	25	29	26	12. Des. missing	6	5	0
				No. Recalling Design	33	43	28

TABLE VI. Correlation Between Sums of Scores of Recalled Designs and Sums of Scores of Same Designs Copied

Group	N	Correlation Coefficient	P
Organics.....	33	.696	.001
Schizophrenics.....	50	.504	.001
Normals.....	33	.597	.001

TABLE VII. A Comparison Between Sums of Scores of Recalled Designs and Sums of Scores of Same Designs Copied

Group	N	t	P
Organics.....	33	5.66	.001
Schizophrenics.....	50	5.96	.001
Normals.....	33	7.11	.001

pressed in percent, with which each of the indices occurred in the recalls of the three groups. This tabulation is presented primarily as normative data for the present recall quantification obtained with three widely differing groups of subjects. In addition it provides an indication of the sorts of distortions to be expected on the recall regardless of the group studied. It may be noted that out of the total of 117 indices, 32 were not scored for the organics, 33 never occurred in the schizophrenic group and 42 were not found in the normal recalls. Of this number, 22 were absent in all three groups. The comparative superiority of the normals in this respect is emphasized by the fact that they recalled considerably more designs than either of the other two groups and yet made fewer kinds of errors.

Relationship between Recall and Copy Quality

A series of computations were performed to determine the relationships between the overall quality of the recalled designs and the accuracy of the original reproductions. This analysis revealed very significant correlations between the sum of the recalled design scores and the sum of the scores for the same designs copied. As shown in Table VI, this finding applied to all three groups with the highest correlation obtained for the organic group and the lowest for the schizophrenics. While the correlations are significant, it is to be observed that they are not sufficiently high to be used for individual prediction.

When the patients' and normals' recall and copy performances on the same designs were compared employing t to test for significant differences, it was found that the quality of the recall in all three groups was markedly inferior to the copied reproductions. The t values of the recall-copy comparisons are reported in Table VII.

DISCUSSION

The major purpose in the proposed investigation has been to subject the recall productions of the Bender-Gestalt Test to the same sort of rigorous quantification procedures that have thus far been applied only to the standard copy phase. The results of this study indicate that the P&S weighted score items for Designs 1 through 8 may be used effectively to quantify the recalled designs. In addition, the series of 19 indices developed for scoring Design A were found to be as reliable as the original P&S indicators and easily employed with both the copy and recall procedures. It is the authors' feeling that this modified P&S quantification is as comprehensive when applied to the recall as the original P&S system is when used with the copy phase. While 22 items out of a total of 117 recall indicators were not scored for any of the subjects included in this study, it has been the authors' experience that a comparable number of items are as rarely encountered in the copy productions. The number of subjects included in this study is insufficiently large to permit an adequate evaluation of whether certain items are entirely appropriate for the recall. Cross validation studies dealing with a variety of subject populations should clarify this point.

With regard to the application of the identical weights to deviations occurring in the recall as occur in the copy phase, again the number of subjects included in this study, as well as the nature of the control group, do not permit any definite statement on this issue. However, generally speaking, the present weights appear to be valid, in the sense of indicating the degree of stimulus deviation shown, when they are applied to the recall. For the most part the results of the group comparisons of summed weighted scores for each design are in agreement with what was anticipated; namely, that the organics tend to re-

call the Bender-Gestalt designs with less accuracy than either the schizophrenics or the normals, with the normals being the most accurate in their reproductions.

When group comparisons are made on specific scoring items, a somewhat surprising finding was the rather sparse number of signs obtained which differentiated the normals from the schizophrenics. In some contrast to the results of Arazi (2), who found that schizophrenics had significantly greater number of major distortions, including contaminations, in their recalls than did the normals, the present study found only two items in which the schizophrenics were significantly worse than the normals, and these were relatively minor distortions. The fact that the normal group used in this study did not differ from the other two groups more markedly with respect to the presence of severe distortions in their recalled designs, suggests that some of our conceptions of what constitutes a deviant recall may have to be revised. Furthermore, the obtained correlations between the extent of disturbance evident on the copied productions with that seen on the recall suggests that a significant portion of the recall distortion is a function of the original drawings. A more detailed analysis of the relationship between the copy and the recall may clarify this relationship and thereby improve the diagnostic usefulness of the recall procedure. This analysis is contemplated in the future.

SUMMARY

The present study was designed as a pilot investigation directed toward the development of a system for quantifying the Bender-Gestalt recall. After examining a number of scoring systems dealing with both the recall and the standard copy procedures, the system devised by Pascal and Suttell for scoring the copy phase was selected as the basic model for recall quantification. Since this method did

not include a scoring system for Design A, a number of items were developed which appeared to encompass the majority of deviations usually encountered in Design A as well as corresponding closely with similar items already used in scoring the other eight designs. The resulting recall scale included the 98 items used by Pascal and Suttell in their original quantification of Designs 1 through 8 together with an additional 19 items for Design A.

The Bender-Gestalt copy and recall procedures were administered to two patient groups, one having a variety of organic diagnoses and the other having solely schizophrenic diagnoses, and one normal group, all student nurses. The copy and recall protocols for each subject were then scored using the Pascal and Suttell method for the copy phase and the present modification of it for the recall. When the scores for the recalled designs were compared with similar scores for the same designs which had been copied, all three groups were found to be far worse in their ability to recall the designs accurately than in their ability to copy them acceptably. A design by design analysis using the P&S weighted scores revealed that, in general, the organics reproduced the designs least accurately from memory with the schizophrenics and normals coming next in this order. An analysis of the frequencies with which the specific scoring items occurred produced twenty indices which differentiated between the groups at the .10 level of confidence or better.

The results of this investigation suggest that the present quantification can be reliably applied to both the recall and copy productions, and that the 117 items comprising the total revised scale include the majority of deviations found in the recall. In that the number of subjects used in this research was not large, and there were certain limitations in the normal control group, cross valida-

tion studies are necessary to evaluate the appropriateness of the various recall scoring indices and their usefulness in discriminating between groups.

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An Experimental Variation of the Draw-A-Person Technique

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The draw-a-person technique devised by Machover (4) has already established itself as a useful projective device for the study of personality, and has been used in a number of valuable investigations. It is generally conceded, none the less, that the subject may be somewhat inhibited in his approach to the task, and that this fact may complicate problems of interpretation. The desirability of an experimental technique of "disinhibition," of producing a response set which might have the effect of "unmasking" some concealed elements, is therefore obvious.

A device which seems to serve this purpose rather well is that of asking S to draw a person "as an idiot would." While this instruction is in itself ambiguous (and therefore an invitation to projection), it constitutes also a suggestion to S that he draw in an uninhibited manner. The results reported here seem to support the view that this is exactly what happens.

PROCEDURE

The first step in the experimental procedure is to obtain two drawings of the human figure according to the standard instructions laid down by Machover. As soon as S has finished these drawings, the examiner presents the following comment and request: "The drawing of a human figure depends, among other things, on the intelligence of the person making the drawing. That is: an idiot, a stupid person, does not draw like a normal person. Now I would like you to do me the favor of drawing a person as you think you would draw it if you

were an idiot. What I ask of you seems very queer, does it not? . . ." (A pause follows, long enough to give time to the examinee to agree with this comment by expressing his astonishment.) Then the examiner continues: "I can, however, give you some good advice: don't think about it too much, lay it out without worrying, as a real idiot would. The drawing is easier now than before; since you are drawing in the manner of an idiot, no one is going to criticize your product."

After the first drawing in Trial B (as an idiot; the normal drawing will be called Trial A), S is asked for another, of the sex opposite to that just sketched. In case the sex of the first production is unrecognizable, and is conceded to be asexual by S, two other figures are requested, following Machover's procedure.

Many S's protested at these instructions; they insisted on their absolute lack of knowledge as to the way in which idiots draw, and protested against the "difficulty" of the task. These reactions appeared to be mostly defensive in character. The examiner gave evasive responses to these protests, always returning to the original instructions. This procedure overcame the resistance in all cases. The Trial B drawings were actually produced more rapidly than those of Trial A.

Subjects. The present report deals with the drawings of 81 S's, 50 women and 31 men, inhabitants of the Latium region near Rome, age range 20-40 years.² All were well-educated, having at least the diploma from the *Scuola Media Superiore* (American high school level). None of the S's showed any overt psychopathology.

¹ The assistance of Ross Stagner, University of Illinois, with the English language version of this paper is appreciated.

² With the exception of one woman, aged 51.

TABLE I—Aspects of the Human Figure which are Generally Modified in Trial B as Compared with Trial A

	Increase	Diminution	Other Modifications
Size of the head.....	75.3%	4.9%	19.7%
Deviation of the upper limbs from the median line.....	58.7%	7.4%	34.9%
Relief of the extremities (feet and hands).....	58.0%	8.6%	33.3%
Segmentation of the trunk of the feminine figure	11.8%	45.6%	39.5%

RESULTS

The drawings of Trial B have been compared with those of the same S on Trial A. Interest centers particularly upon *global aspects* of the drawing, size of the total drawing and of selected parts, *expressive style*, and *transformation of details*. The present discussion will be limited to those changes which are manifest by a substantial percentage of subjects.

Global aspects. The commonest trend noted in the drawings is toward simplification in Trial B. Segmentation of the trunk in the female figure decreases in 45 per cent of S's (Table I). Drawings are executed more rapidly, and many details are eliminated. Especially striking is the fact that 12 S's (14 per cent of the total) drew first on Trial B a figure without sexual differentiation. (This of course does not occur under the normal instructions used in Trial A.) Secondly, of the 35 S's who had drawn figures in profile or dorsal view—an "evasive" position—29 changed to a frontal view in Trial B. An example of this change is given in Figs. 1A and 1B, drawn by the same S.

The elimination of some details is accompanied by an exaggeration of others (data on size changes are given below). Strong relief is characteristic of the Trial B drawings; and there is little subordination of one part to another. The "surviving" details are not given equal weight in the drawing. For example, hands and feet are emphasized or exaggerated in Trial B (see Table I, and Figs. 6A, 6B).

Size. There is a tendency for the over-all size of the drawing to increase, but this is not uniform. In Table I it will be noted that there is usually an increase in the size of the head.

Expressive style. The importance of expressive style in relation to content has been emphasized by Bellak (1). In some cases the modification of style in Trial B is so extreme that it seems difficult to ascribe the drawings to the same author, as for example, Figures 2 and 3, all done by the same S. The Trial A drawings indicate uncertainty of line, absence of eyes, restrained posture, etc. The corresponding Trial B drawings add breasts to the female and genitals to the male

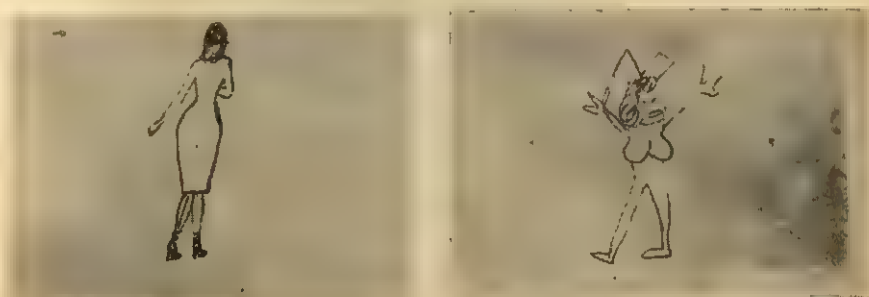


FIGURE 1. Drawings of S.G. (male), Trial A (left), Trial B (right).



FIGURE 2A



FIGURE 2B

figure, teeth and eyes to both; the lines are firm and unhesitating, the posture open and indeed aggressive. While it is difficult to quantify in

simple terms the changes in style, it will be noted (Table I) that the position of the arms away from the body is highly characteristic of the Trial B

TABLE II—The Most Common Types of Hair-Drawing Associated with Male and Female Figures Drawn on Trial B

	Female Figure	Male Figure
Linear—descending hair.....	28.3%	1.2%
Linear—ascending hair.....	9.8%	23.4%
Absence of hair.....	9.8%	35.8%
Headgears.....	...	29.6%
Head with childish characteristics or attributes (ribbons, headbands, etc.)	9.8%	1.2%
Wavy hair, disheveled hair and other unusual drawings of hair.....	41.9%	8.6%

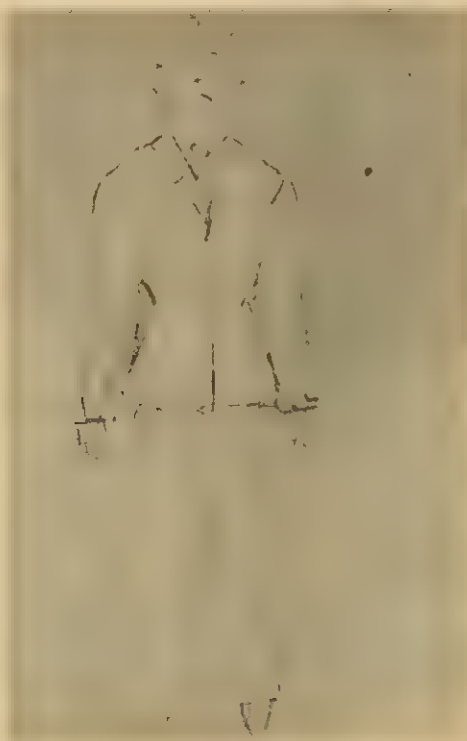


FIGURE 3A

drawings. The upward orientation of the arms (Fig. 1) is quite common. The addition of teeth, so striking in Figs. 2B and 3B, is rather frequent; 2 women out of 50, and 7 men out of 31, added teeth in Trial B. Even without teeth, the mouth may be emphasized.' (Fig. 5.)

Treatment of hair. As various authors have suggested, the hair is an important detail in the drawing. Our S's show a marked tendency to accentuate the differences between male and female figures as regards the hair

(Table II). Female hair is changed (where change can be depicted) to a disheveled appearance, or to descending pencil strokes, whereas male hair is represented more often by ascending strokes (Fig. 7B). Men, however, are quite likely to be represented without hair, or with hair concealed by some kind of headgear. Hair is shown as disheveled (Fig. 4B), with childish ornamentation (Fig. 1B) and so on.

Clothes. Changes with respect to clothing are of varied character. In

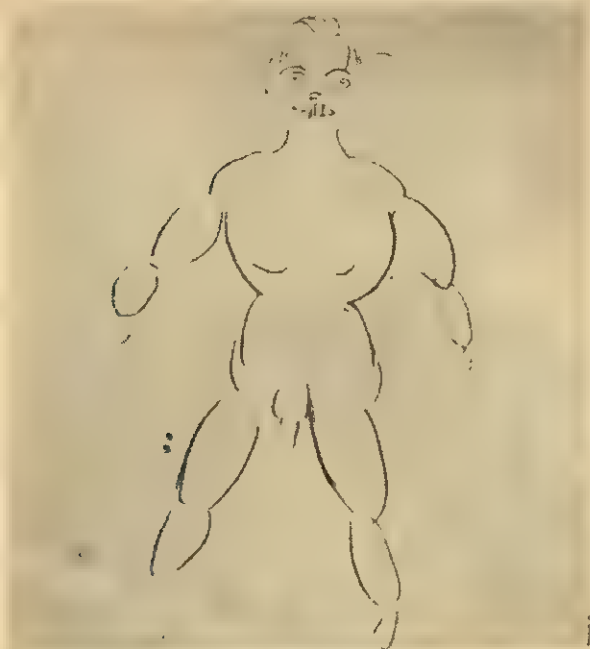
**FIGURE 3B****FIGURE 4A (left) , 4B (right)**



FIGURE 5A (left), 5B (right)

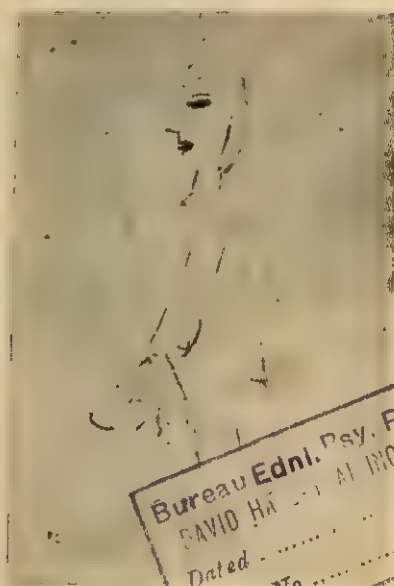


FIGURE 6A (left), 6B (right)

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Trial B drawings the clothing may disappear; or a suggestion of conflict is presented when S draws a figure without clothes first, then traces clothing in afterward without bothering to erase the lines of the body which

should be concealed by the clothing (Fig. 4B). This "transparency" seems related to other phenomena of a sexual nature. Some of these trends are as follows: in female S's, the breasts may disappear on Trial B, but if they



FIGURE 7A (left), 7B (right)

persist, they are accentuated; in-male S's, the breasts are likely to be exaggerated on Trial B (41 per cent of males showed this trend).

The kinds of changes that occur, in a typical if somewhat extreme form, are summarized in Figs. 2 and 3, all drawn by the same S, a middle-aged female. Her Trial A drawings (Figs. 2A, 3A) are characterized by extreme uncertainty, by marked segmentation, by absence of eyes (although eyebrows are clearly shown), by restrained posture and somewhat depressed expression. In contrast, the Trial B drawings are clear, muscular nudes, with added eyes, teeth, breasts and genitals; the lines are firm, the sketching rapid and careless. Both posture and animal-like teeth suggest aggressiveness. Indeed, the marked release of both sexual and aggressive symbolism in the Trial B figures reminds us of the often-postulated unity of aggressive and sexual impulses.

DISCUSSION

If we take these results at face value it is easy to conclude that the experimental variation in technique of ask-

ing a person to draw a human figure "as an idiot would" does have a disinhibiting or "unmasking" effect. However, it would be premature to consider this point proven. Because we are accustomed to assume that normal individuals have to some extent inhibited their sexual and aggressive strivings, we are not surprised when this experimental method elicits evidence of more outspoken urges in these directions. A more methodical check, however, would require clinical studies of individual cases in relation to the type of change manifested from Trial A to Trial B. What differences, for example, characterize subject SM (Fig. 5) as contrasted with subject MG (Fig. 2)? Such data are not yet available.

Another question which must be asked relates to the subjective attitude or "response set" of S while making these drawings. The use of the term *deficiente* ("idiot") necessarily gives rise to some ambiguity. The term does, nevertheless, carry some normal meaning. Therefore the manner in which S deals with this situation may be considered, as Cattell (2) has sug-

gested, a variety of dynamic distortion. This may be a case in which S perceives the idiot as a hypersexual and hyperaggressive person, and reflects this perception in his drawing.

It may be claimed, on the other hand, that S has only revealed his *stereotype* of an idiot; that is, if he believes that idiots are all sex and aggression, perhaps he projects these characteristics into the drawing. This would not argue against the validity of the draw-a-person technique, but it would cast doubt on the hypothesis that our experimental device produces disinhibition.

In favor of the "disinhibition" hypothesis, we can point to various aspects of the evidence which do not depend on the introduction of manifest symbolism. We note, for example, the signs of greater assurance in graphic style, increases in total size and in head size, reduction of total time required, elimination of evasive (profile and dorsal) positions, removal of the arms from the mean line of the trunk, greater relief of limbs and extremities, reduced segmentation of the trunk, etc. It is somewhat difficult to assume that all of these derive from a stereotyped conception of an idiot or an idiot's drawing.

One aspect of the "disinhibition" which seems fairly clear from comments by the subjects is that of freedom from self-criticism in the mechan-

ics of drawing. It is as if S said to himself, "Now it is not important if I draw badly or not." This attitude was, of course, encouraged by the phrasing of the experimental instructions.

SUMMARY

An experimental variation of the Machover draw-a-person technique is reported. After producing drawings in the normal manner, S was asked to draw human figures "as an idiot would." Changes in the direction of simplification, exaggeration of sexual and aggressive details, and expressive style suggested that the technique had elicited a disinhibition, revealing aspects of the personality which were kept in concealment when drawing under the usual instructions. It is suggested that the technique represents a useful extension of the draw-a-person method as usually employed.

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The Validity, Bases, and Process of Clinical Judgment, Using a Limited Amount of Projective Test Data

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In approaches to validation of the Rorschach test, it has been difficult to formulate research designs in such a way that the research mirrors the practical, everyday operations of the clinician. In an effort to handle this problem, researchers in one approach have used the judgments of the clinician as their data, focusing primarily on the end result of the integrative process rather than on the process itself. This raises a second problem, namely, how will the judgment of the clinician vary as a function of training, skill, the data available to him, etc. A third problem has to do with the existence and adequacy of criteria against which predictions from projective test data shall be compared, while a further problem concerns the type of behavior that we are trying to predict. Much of the research on the Rorschach test has been concerned with the exploration of relationships between Rorschach performance and overt behavioral reactions. Korner (1), however, states that the overt behavior of the individual is multiply and complexly determined, and that we are unable to effectively predict reality behavior from projective test data. She points out that this problem is not unique for clinical psychology, that it has not yet been solved by clinical psychiatry, and that it may never be adequately solved.

If prediction of reality behavior from test data has met with only minimal success, the question arises as to just what we are going to correlate with or predict from projective test data. The constructs developed in personality theory may have relevance at this point, intervening as they do between the needs of the individual and

his overt behavior, even though perfect knowledge of these intervening variables in a given individual will not result in perfect prediction of reality behavior because of the fact that other factors will also be of importance in the determination of the emergence of specific reality behavior.

Individual case studies, as reported in the literature, have unsystematically followed this general approach. A recent article by Symonds (2) limited the amount of data presented to the judges to a single Rorschach protocol, sought to determine what aspects of the Rorschach material clinicians responded to in making judgments, and sought some measure of the validity of the clinicians' judgments by comparing them primarily with data obtained in a limited number of therapy interviews. Concern with the aspects of Rorschach material responded to by the judges represents an advance, but the unstructured nature of the judgment task in this instance makes it difficult to compare one judge with another and gives too much leeway to the judges in choosing areas of discussion.

The present study was designed to study the judgment process of clinicians in dealing with a small unit of projective test data. The authors decided to limit the amount of data presented to the judges for two reasons: (1) in order to make the task a less cumbersome one for the judges; and (2) in order that the judges might more easily specify the bases of their judgments in terms of specific test data. The unit of projective test data consisted of the responses to Card I of the Rorschach by a 34 year old male subject who was being seen in therapy as an out-patient at the

time he was tested. Information was available about the subject from 15 therapy interviews, a battery of test data, social service interviews with his family, and some follow-up data over a six-year period.

The subject's responses to Card I are as follows:

CARD I

19"

1. Something like a pelvis—view from bottom toward top.
2. Two animals with backs to each other—wolf nature.
3. A mask for a face. Ends for over the ears. Large slits: mouth, and chin.

96"

ject relates to others and attitudes toward others; (7) self concept and self attitudes; (8) type of symptomatology; (9) diagnostic category; (10) identification; and (11) anxiety level.

In the second and final phase of the study, a mimeographed copy of the subject's responses to Card I was pre-

METHOD

All of the judges used in the present study had had at least five years of experience in Rorschach administration and interpretation and all had a Ph.D. degree. Four judges were used in the initial phase of the study, all of whom had received the Ph.D. degree from the University of Pittsburgh. Six judges were used in the second and final phase of the study, all of whom had received a degree from different universities.

In the initial phase of the study the entire Rorschach of the subject was presented card by card to the four previously described judges and they were asked to record comments about the subject. This task was completely unstructured. The purpose of this procedure was to obtain a number of variables which would serve as common points of discussion for the six judges whose task it was to evaluate the performance of the subject on Card I, and to obtain variables which were not arbitrarily determined.

On the basis of the discussion of the entire Rorschach by these four judges, the following 11 variables were extracted: (1) intellectual level; (2) intellectual efficiency; (3) conflict areas; (4) defenses; (5) emotional control; (6) way in which sub-

1. (whole response) General contour, from bottom up. The holes should not be there.
2. (whole response. He manages to fit in the whole blot, F—) Grotesque, Snout out of proportion (side wings are the "snouts").
3. (whole response)

sented to each of the six judges, with the additional information that the subject was a 34 year old male. The judges were also given a list of the 11 variables listed above and they were asked to check those variables which they were willing to discuss on the basis of the data available to them. They were instructed to discuss each variable which they checked as completely as they felt necessary, but they were asked to put down their evidence for each statement in terms of specific aspects of the subject's performance on Card I.

RESULTS

The results of the present study will be considered from three aspects, namely: (1) validity; (2) the process of judgment; and (3) the general classes of cues used by the judges.

Validity. Insofar as validity is concerned, the impressions about the subject offered by the judges on the basis of the performance of the subject on Card I were compared with the impressions about the subject offered by a psychiatrist, who was unfamiliar with the results of the present study. His impressions were based on all of the available material and he discussed the same variables, with the exception of (1) intellectual level, and (2) intellectual efficiency. He felt

that the test data was more appropriate to these two variables.

All six judges estimated the intellectual level of the subject and the consensus was that the subject had high average intelligence, in the 110-120 I.Q. range. The subject's verbal I.Q. on the Wechsler-Bellevue, Form I was 124, his performance I.Q. was 103, and his full scale I.Q. was 115.

All six judges felt that the intellectual efficiency of the subject was impaired, that he had functioned at a higher level in the past. In evaluating the total test performance of the subject, with the life history and therapy data available to him, the psychologist who had tested the subject stated that his "intellectual functioning was uneven. Temporary inefficiency due to alcoholism undoubtedly played a part . . . but some degree of gradual permanent loss must also be assumed."

In commenting about conflict-areas, five judges stressed a sexual conflict, with homosexuality, latent homosexuality, and fear of heterosexuality being stressed. Three judges also stressed conflict over hostility, stressing either oral aggression, fear of his own hostile impulses, or conflict over the expression of hostility. The psychiatrist emphasized the following points of conflict: (1) passive-receptive needs which are frustrated, with resultant rage which must be repressed because of dependence on others; (2) conflict around aggressive, hostile wishes; and (3) intense guilt, with the patient making atonement by self-destructive tendencies.

In commenting about the subject's defenses, three of the judges mentioned three defenses while the remaining three judges mentioned two defenses. The defenses of suppression and repression were mentioned as a duo by three judges, suppression and somatization by three judges, and suppression and projection by two judges. These were the only defenses mentioned by more than one judge. Two defenses were mentioned only once,

both by the same judge, and these two defenses were intellectualization and withdrawal. The psychiatrist mentioned five defenses, namely, regression, repression, denial, projection, and intellectualization.

In discussing the emotional control of the subject, the six judges variously stressed the brittle emotional control of the subject, his difficulty in maintaining control over hostility, and his overcontrolled emotionality. The psychiatrist stressed the fact that the subject defends strongly against affect, repressing anger and aggression and fearing sexuality.

In discussing the way in which the subject relates to others and attitudes toward others, all six judges stressed the fact that he is probably guarded and suspicious in his contacts with others, that he is threatened by them. The psychiatrist stressed the fact that the subject lets others assume responsibility and says in effect "take care of me." He relates in a passive dependent way to others, is chronically frustrated and therefore always enraged and angry, with the anger being repressed.

In discussing self concept and self attitudes, four judges primarily stressed the subject's feelings of inadequacy, incompleteness, and insufficiency. The psychiatrist stressed the fact that the subject feels cheated and deprived, and that he has chronically low self esteem and feelings of weakness and emptiness along with continuous superficial attempts to deny this.

In discussing type of symptomatology, one judge stressed probable somatization, poor work habits, and alcoholism or irregular eating habits, while a second judge stressed vague bodily symptoms, generalized anxiety, and withdrawal. The psychiatrist stressed the following symptoms: (1) self destructive tendencies; (2) passive dependency with oral demandingness; (3) depression; (4) rage which is largely repressed but shows itself in the sadistic domination of his environment; and (5) alcoholism.

In commenting on diagnostic category, one judge very tentatively diagnosed the subject as a schizophrenic with strong resistive and paranoid elements, while a second judge made a diagnosis of anxiety hysteria and felt that the subject was moving toward a schizophrenic break. The psychiatrist diagnosed the subject as a personality pattern disorder, a passive dependent personality with chronic alcoholism.

Three judges discussed the subject's identification and they stressed variously his confused identification, his questionable identification with a male figure, and the fact that underneath he is desirous of adopting a passive role even though his conscious identification is generally probably masculine. The psychiatrist felt that the subject's identification was primarily with his mother in a passive dependent way.

All six judges agreed that the subject's anxiety level was high, with one judge commenting on the difference between "manifest" anxiety and "underlying" anxiety. The psychiatrist stated that the degree of repression and other defenses indicate very great anxiety.

Because of the limited amount of data available to the six judges and because of the lack of specific definition of the 11 variables, we would not expect perfect coincidence of judgments with the criterion measures. A further deterrent to perfect agreement is the fact that the psychiatrist dealt with a much larger amount of material and, out of economy or necessity, might tend to highlight certain trends at the expense of others. The results bear this out. Agreement with the criterion measures was fairly good for the variables of intellectual level, intellectual efficiency, self concept and self attitudes, identification, and anxiety level; and agreement was least adequate for the variables of way in which subject relates to others and attitudes toward others, type of symptomatology, diagnostic category, and

emotional control. In the case of the variable of type of symptomatology it seems obvious that the differences between the judges and the psychiatrist arise in large part from the particular factors which each feels should be subsumed under this term, and all of the symptoms pointed out by the two judges are actually consistent with the overall clinical picture. The disparity between the judges and the psychiatrist in handling the variable of emotional control appears in large part to be a function of a difference in emphasis, with the judges primarily emphasizing the ineffectiveness of the subject's control of impulses while the psychiatrist primarily emphasizes the subject's strong need to control these impulses.

The use of the 11 variables as common discussion points appears to have been a worthwhile modification, focusing attention not only on inter-judge variation but also on the variation in the type of judgments made by the judges as a group and by the psychiatrist. As an example of the latter, the listing of alcoholism as a symptom is a simple matter of looking at the historical data for the psychiatrist, whereas it is a complex inference on the part of the psychologist and is offered tentatively.

The 11 variables were not spelled out or delimited in any way for the judges or the psychiatrist, and the inadequacy of this procedure is apparent, at least for many of the variables, because of the leeway given to the judges in their interpretation of these variables. The more different such interpretations are, the more difficult inter-judge comparisons become, as well as comparisons between their judgments and the criterion measures. In any future study of this type, the variables should be delimited.

The process of judgment. In the process of arriving at their judgments, the judges made inferences on the basis of either: (1) several units of evidence; (2) all of the available

evidence; or (3) one unit of evidence. They used the above procedures in descending order of frequency. Two other procedures were used in making inferences, but with practically negligible frequency. In these two procedures the judges either: (4) made an inference on the basis of response sequence; or (5) made an initial inference on the basis of one or more units of evidence and then built a structure of further inferences, logically bound together and related to the initial inference, with the basis of the logic being psychoanalytic theory.

The general classes of cues used by the judges. The general classes of cues responded to by the judges, in descending order of frequency, were as follows: (1) content; (2) elaborative comments; (3) the overall pattern of responses; (4) traditional Rorschach scores; and (5) vocabulary. One judge also responded to (6) the response sequence.

In order to tie the process of judgment and the particular cues used by the judges to the preceding material on validity, an example will be taken from each of the 11 areas discussed under validity. Each example was chosen because it is illustrative of the primary type of evidence offered by the judges as a group in discussing each variable, and each example will be described briefly in terms of process and cues.

1. Intellectual level — One judge said that the subject had bright-normal intelligence because of (a) his vocabulary usage and (b) his W tendency. The judge therefore used several units of evidence, namely, vocabulary and traditional Rorschach scores.
2. Intellectual efficiency—One judge said that at one time the subject "probably functioned somewhat higher than he does now because the response pattern is a 'sick' one and would imply that energy needed for intellectual pursuit or creativeness is 'tied up' in maintaining control." The

judge used all of the available evidence, the overall pattern of responses, in arriving at a decision.

3. Conflict areas—One judge said that "a homosexual conflict is suggested because of the subject's manner of perceiving the pelvis, i.e., the view from the bottom toward the top." The judge used several units of evidence in this instance, namely, the pelvis content and the subject's elaboration of this content. After his initial inference, this judge continued, "At a deeper level this homosexual conflict might indicate a conflict over whether to relate passively or actively; in turn, this points to deep dependent needs and probable early frustration of security." The latter comments illustrate the process of building a structure of inferences, and is one of the two instances of the use of this procedure.
4. Defenses—One judge said that the subject used suppression as a defense because of the "constriction and guardedness implied by the 'mask' response and by the absence of other than form responses." In this case the judge made use of several units of evidence, namely, specific content and traditional Rorschach scores.
5. Emotional control—One judge said that the subject's "emotional control is poor because of the F— response and its content, i.e., the distortion of the blot into something predatory and destructive." He thus made use of several units of evidence, namely, traditional Rorschach scores and specific content.
6. Way in which subject relates to others and attitudes toward others. One judge said that the subject "is fearful of close contact because the back to back stance of the animals suggests inhibition and avoidance along with evasion." The judge primarily

made use of a single unit of evidence, namely, the specific elaborative comment concerning the animal response.

7. Self concept and self attitudes — One judge said that the subject "has strong feelings of inadequacy" because the 'mask' content suggests that he "covers up." In this instance the judge used one unit of evidence, the mask content, with his inference that the subject has feelings of inadequacy being based on his previous inference that the subject's need to "cover up" betrays the presence of underlying feelings of inadequacy.
8. Type of symptomatology — One judge mentioned "withdrawal from others" as one symptom. The judge said that the "grotesque" comment suggests that the subject "feels different from others, i.e., odd" and that he withdraws from others because of this. The judge therefore used one unit of evidence in this instance, an elaborative comment by the subject, inferring that this comment has a self reference and inferring further that those people with such a self concept will tend to withdraw from others.
9. Diagnostic category—One judge said that "although I feel that I should have considerably more evidence than this, I do get the impression of schizophrenia with strong resistive and paranoid elements. Another way of putting it—I have seen schizophrenics perform in much this way." In this case the judge was making use of all of the available evidence, the overall pattern of responses, in arriving at a decision.
10. Identification — One judge said that the subject's "conscious identification is generally masculine" because of the "wolf nature" response, but felt that underneath the subject is quite desirous of adopting a passive role because

of the "pelvis, view from bottom toward top" response. The judge therefore used several units of evidence, namely, content and elaborative comments.

11. Anxiety level—One judge said that the subject's anxiety level was high "because the pelvis response reflects bodily concern, the wolf nature response reflects feelings of threat from without, and the mask response reflects a necessity to protect his feelings from the view of others." The judge used several units of evidence, all of which may be labeled content, and the inference about anxiety level was based on the accumulation of specific inferences about each element of content.

The inferential nature of clinical judgment is quite in evidence in the above examples, with the judges "taking off" from the small amount of data available to them and speculating far beyond the most obvious characteristics of these data. The inferences of the judges appear to be primarily a function of the following factors: (1) personal experience with the Rorschach test, with the subsequent development of sets and expectations, some of which are personalized but most of which are held in common; (2) familiarity with personality theory in general and the ability to use this knowledge in Rorschach interpretation; and (3) the ability of the judge to actively formulate hypotheses about what the subject is like, with this ability probably being a function of either the motivation of the judge or the general clinical acumen of the judge or, most likely, both factors.

All of the judges had roughly had a similar amount of clinical experience. Several judges, however, were more "successful" than the others in approximating the criterion measures, and their greater degree of success may be attributed primarily to their superior ability to make use of their knowledge of personality theory in

making inferences from the Rorschach.

The primary cues used by the judges were overwhelmingly what might broadly be referred to as "content," as opposed to traditional Rorschach scores. The judges rarely made statements on the basis of Rorschach scores alone, using them primarily as supportive evidence. Undoubtedly, however, the judges were implicitly taking such factors into consideration, since they were undoubtedly taking the subject's total card performance as their base.

DISCUSSION

The encouraging degree of validity obtained in the present study suggests that it may be profitable to pursue the methodology used, with modifications. The eleven variables, for the most part, pertain to personality factors which intervene between the needs of the individual on the one hand and his overt behavior on the other hand, and are consistent with Korner's emphases. There is nothing sacred about the present list and they may well be modified, either by definition, deletion, or addition. In terms of obtaining maximal cooperation from the judges it might be well to limit the number of variables to less than ten.

The general attitudes of the judges in approaching the present task might be summed as follows: (1) they accepted the subject's handling of Card I as a valid sample of the handling of a task with which they had had extensive clinical experience, namely, Card I of the Rorschach; (2) they assumed that *what* the subject perceived, the *manner* in which he perceived it, and the way in which he *described* his responses were not chance matters but were instead a function of his personality pattern; and (3) they felt that one aspect or another of the limited sample of behavior made available to them was pertinent in making statements about the subject with regard to his intel-

lectual level, conflict areas, etc.

In the framework of this general attitude it is possible to undertake a study of the judgment process of clinicians in two ways. The judges in the present study apparently made initial judgments about the more or less obvious characteristics of the behavior sample confronting them. These initial judgments are not always explicitly spelled out by the judges, but are obviously close to a descriptive level whenever this is done. Marked disagreements between the judges were rare at this level, though disagreements did occur, for example, concerning the quality of the whole responses of the subject, the degree of elaboration of the subject's responses, and adequacy of the number of responses given by the subject to Card I. It should be relatively easy to ferret out disagreements at this level of judgment. The judges then "take off" from these initial judgments to make further speculations. These second level judgments may be examined both from the aspect of logic and from the aspect of validity, in terms of some criterion such as the one used in the present study.

SUMMARY

The present study investigated the validity, bases, and process of clinical judgment, using a limited amount of projective test data, namely, Card I of the Rorschach of a 34 year old male subject. The study introduced a modification of having the judges discuss the same factors with respect to the subject, instead of allowing the judges complete freedom in deciding what to discuss. The results show that judges are able to make reasonably valid statements about a subject on the basis of a limited amount of projective test data. The procedure also shows the necessity of fairly exact delimitation and specification of the variables such as defenses, etc., if meaningful inter-judge comparisons are to be made as well as meaningful comparisons of their judgments with a cri-

terion measure. The results further show that, within the framework of the subject's overall performance on Card I, the judges tended to single out factors which might broadly be referred to as "content" in support of their inferences rather than traditional Rorschach scores. Whenever the latter were singled out, they were generally used as supportive evidence rather than primary evidence. Finally, the study shows clearly the inferential nature of the judgment process, with the judges "taking off" and going far beyond the most overt characteristics of the data. The most important variables in this "taking off" process appeared to be personal experience with the Rorschach test, a knowledge of personality theory and the ability to apply this knowledge in Rorschach interpretation, and the general clini-

cal acumen as well as the motivation of the judge. It was suggested that the judgment process consists of two levels, more or less, with the first level being at a more or less descriptive level and the second level using the initial judgments as a jumping off point for speculation. It was further suggested that disagreements can be fairly easily uncovered at the descriptive level, while the second level speculations may be examined from the aspect of logic and from the aspect of validity.

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The Prediction of Overt Aggressive Verbal Behavior from Rorschach Content¹

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The research reported in this paper represents an attempt to establish a relationship between the content of Rorschach responses and the overt behavioral expression of aggression. No assumptions are made concerning the degree to which the subject is aware that he is expressing aggression; a purely overt behavioral approach is intended. As the title suggests, only a limited type of aggressive behavior was under study here. The intent of the study was to determine whether or not the content of the subject's responses is related to his overt behavior in at least one type of situation. This study was limited to the content of responses as opposed to formal scoring categories for three reasons: because previous studies (8, 21) have failed to demonstrate any extensive relationship between aggressive behavior and the formal scoring; because some authorities (27) feel content to be the more fruitful approach in general; and, most important, because one of the aims of this study was to shed light on previous

studies in this area which utilized content (6, 8, 9, 18, 21, 23, 25).

There have been a number of attempts to show a relationship between the content of the Rorschach and various measures of aggressive behavior or aggressive drive (6, 8, 9, 18, 21, 23, 25). These studies all assume a positive relationship between hostile content on the Rorschach and underlying aggressive drive, and the results generally confirm this. However, there is some conflict among the studies as to whether hostile content is positively (8, 9, 21, 23) or negatively (6, 18) related to overt aggressive behavior.

The present study differs from previous studies, both in the mode of aggressive expression to which prediction is made, and in the nature of the Rorschach content from which prediction is made. Thus, previous studies have either not attempted to predict specific overt behavior at all (6, 25), or have been primarily concerned with extreme physical expressions of aggression (8, 21, 23). Other studies (9, 18) did not involve explicitly defined aggressive behavior. The present study seeks to predict to a behavioral criterion, but one which is much less extreme in form than assaultive behavior and, also, which is on a verbal rather than a physical level. In addition, previous published studies have not taken into account the inhibitory or counter-aggressive forces in the personality, which may modify the extent to which aggressive impulses of any particular intensity will be expressed in behavior. From many theoretical positions (e.g., 5, 7, 17) these counter-aggressive forces are as important in determining the behavioral outcome as the original drive itself. The research reported

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herein represents a more refined attempt to predict overt aggression from the Rorschach, by estimating Rorschach content indicators of both aggressive drive and inhibitory forces in the personality.

SUBJECTS AND PROCEDURES

The procedure consists essentially in correlating Rorschach content indices of aggressive potential with a criterion measure based upon the subjects' behavior in therapeutic discussion groups as rated by the therapist and an observer.³

Subjects:

The subjects for the study consisted of state prison inmates who were taking part in six weekly discussion groups at the prison. During the six months in which these groups met, 44 inmates remained in the groups long enough to provide usable data.⁴ Some of the Rorschach protocols were extremely sparse, however, and it was felt that such records could not be used for valid prediction. A difference of only one in the incidence of a particular type of content in such a barren record would change all the prediction scores markedly. Therefore, an arbitrary ruling was made that no record whose self-expression score (see below) was 9 or less would be used in this study. This eliminated six subjects making the final number

of subjects utilized in the study equal to 38.

An effort had been made to rule out mental defectives and psychotics and to choose "acceptable" candidates for psychotherapy. Although a disproportionate number of subjects in the groups were sexual offenders, the men in the groups represented a wide sampling of criminal behaviors (e.g., murder, housebreaking, armed robbery, carrying unlawful drugs, embezzlement, homosexuality, rape, statutory rape, and pedophilia). Therefore, the population used in this study was composed of relatively non-pathological cases, psychiatrically and intellectually, who have deviated markedly from the social code.

Four groups were conducted jointly by two psychiatric residents. These groups were more carefully screened with regard to the criteria of therapeutic prognosis than the remaining two groups which were conducted by a psychologist with the experimenter as observer. Because of the differences in criteria of selection, and because of differences in the criterion data, the two groups and the four groups were treated separately in the analysis. The psychologist's groups will be termed Sample A and the psychiatrists' groups will be termed Sample B.

Rorschach data

Rorschachs were all administered by the experimenter, before or during the first month of the group discussions. With the exception of four subjects who were observed once, all subjects were tested before being observed in the groups by the experimenter. The protocols were typed, coded, and filed until after the groups were disbanded more than six months later. They were then scored, without identifying information, by the experimenter. In addition, the records of Sample A were scored independently by one psychologist and the records of Sample B by a second psychologist, neither of whom had

³ In the original design of the study, it was intended to get ratings or other evaluations from the prison personnel. However, this was not possible for administrative reasons. An attempt was made to use prison disciplinary reports as well, but this proved to be impossible because of the infrequency of such reports and because they tended to occur only during the first year or two until the inmate became "prison-wise" and learned to avoid trouble. No other prison records were found to be useful.

⁴ Some of these men either left the prison on discharge, parole, or transfer or they were given jobs in the prison which conflicted with the group meetings. There is no reason to believe this was a selected sub-sample. The rest, about five men, left because they voluntarily decided they no longer wished to continue. The selective factor here is undetermined.

any connection with the prison or knowledge about the prisoners.

The Rorschach was scored in terms of content indicators of both aggressive drive and inhibitory forces in the personality. Underlying aggressive drive was assumed to be reflected in content depicting hostile behavior or feeling, interpersonal conflict, instruments or forces of violence and destruction, aggressive animals or persons, and evidence of accomplished aggression or destruction. Two content categories, termed Hostility and Mutilation (H and M), subsume the contents presumed to reflect underlying aggressive drive. The final expression of this drive is assumed to be dependent upon other personality forces. For example, a person who tends to see only positive or friendly attitudes about him, is likely to manifest these same attitudes to others, even though in some cases these tendencies may be dynamically related to aggressive drive. Similarly, one who seeks to win affection and approval by adopting a deferential, submissive attitude is more likely to curb the overt expression of aggression. Inhibition of aggression may result in a passive, unassertive, or inactive orientation, and in a desire to escape from the needs for assertive, aggressive behavior through regression to the passive-receptive state of childhood (7). Feelings of guilt derive from a strong superego, which is likely to be directed against the expression of aggression as well as other unacceptable impulses. Although the role of the mechanism of redirecting hostility against the ego in the etiology of depression is a matter of some dispute, it seems generally agreed that depressed individuals do tend to direct their hostility toward themselves rather than toward the environment (1, 5, 7, 26). Aggression is frequently inhibited in those who feel inadequate because they do not feel capable of standing up to others in an aggressive fashion and because they try to bolster their self-esteem

by winning the approval of others (7). To attempt to provide some indication of the presence and strength of the foregoing tendencies, attitudes, and feelings, four further categories of content were constructed: Passivity or Friendliness, Guilt, Depression, and Inadequacy. Content was scored in these four categories when it included references to emotions, attitudes or behavior reflecting passivity, friendliness, guilt, depression or inadequacy. It also included references to animals whose cultural stereotype was docility, gentleness, frailty, weakness, or inferiority; reflections of sensitivity to aesthetic qualities; references to religion, purity, or punishment; references to death (without implying an aggressive agent), disease, ruin, decay, desolation, or coldness. The personality factors assumed to be reflected in these four content categories are not specifically directed against or indicative of the inhibition of aggression, but are factors which are considered to be frequently associated with the inhibition of aggression, though not always (e.g., guilt may arise from a sexual conflict, and passivity or inferiority feelings may be reacted against with aggressiveness). Hereafter, the content categories will be referred to by their initials (HM content being associated with aggressive drive and PGDI content being associated with the inhibition of its expression).⁵

Each Rorschach response was scored for another factor, called self-expression. Previous studies have used only the number of hostile responses, sometimes as a percentage of the total

⁵ Many of the ideas for the content scoring schema employed in this study, as well as many of the specific examples used, were derived from Elizur (6), Schafer (20), and DeVos (4). The full schema for scoring content in these six categories has been deposited with the American Documentation Institute. To obtain this material, order Document No. 5193 from American Documentation Institute, 1719 N Street, N.W., Washington 6, D.C., remitting \$1.75 for 35 mm. microfilm or \$2.50 for 6 x 8 in. photocopies.

number of responses, but they failed to consider the subjectivity of the other responses. Bland, stereotyped, guarded, or popular responses are more objective, while unusual, idiosyncratic, emotionally invested responses are more subjective and the content therefore more expressive of some aspect of the self (e.g., motivation, attitudes, mood, defenses). The present study has sought to obtain a measure of the degree of self-expression or subjectivity in each response, based upon such factors as the normative frequency, form level, specificity, and emotional intensity of the response. The scale ranged from 0 to 3 as follows:

- 0=popular responses; or vague and evasive responses;
- 1=popular responses with unusual elaboration; or other responses which are not vague, original, of poor form level, or emotionalized;
- 2=mildly emotionalized responses which are neither original nor of poor form quality; or any unemotionalized responses which are original and/or have poor form quality.
- 3=strongly emotionalized responses; or any mildly emotionalized responses which are original and/or have poor form level.

It was felt that the total self-expression in the content of a record is a more useful base than the number of responses for calculating proportions of specific categories of revealing content, because it is a more accurate index of the total amount of interpretively meaningful content in the record. This permits one to distinguish between two records of equal length, one containing little hostile content and little content reflecting other drives or personality factors, the other record also containing little hostile content but having content which reveals much about other drives and personality factors.⁶

⁶ A more complete description and instructions for scoring of this variable have been

Criterion Data

The criterion of aggressive behavior was based upon a rating scale.⁷ At the end of the hour a global rating of the aggressiveness of the subject during that hour was made upon a 9-point scale. This scale ranged from very compliant, submissive, self-abasing behavior through a relatively neutral point to openly very hostile behavior at the other extreme. Most of the points of the scale were anchored by descriptions of the types of behavior characterizing that level, although the final rating could represent a subjective averaging of several levels of aggressive behavior. A high rating in aggressiveness was given to behavior which was primarily assertive, bitterly denunciatory of the prison administration, dominating, challenging, or which occasionally openly disregarded the feelings and status of others present. A low rating was given to the absence of this sort of behavior and the presence of a more generally compliant, submissive, self-depreciatory attitude, or one which was steadily friendly and positive.

In Sample A, the ratings were made on 11 sessions but because some of the subjects missed some of the sessions, an average of only 8.0 sessions was rated for each subject. In sample B, the ratings were filled out for 15 sessions, but, because of absences, this amounted to 10.5 sessions per subject.

deposited with the American Documentation Institute. It may be obtained by ordering Document No. 5193 from American Documentation Institute, 1719 N Street, N.W., Washington 6, D.C., remitting \$1.75 for 35 mm. microfilm or \$2.50 for 6 x 8 in. photocopies.

⁷ Since both these correlations involve one variable in common, the standard procedure for determining the significance of the difference between correlations could not be employed. A formula suggested for this purpose by Quenouille (15, p. 70) was used

instead. The formula used was:
$$\frac{r_{xa} - r_{ya}}{2(1 - r_{xy})}$$

and the result is to be treated as another correlation coefficient with $n-2$ degree of freedom.

In both samples, the number of sessions for which there was usable information ranged from two to the maximum for the different subjects. All subjects with less than two sessions represented on the criterion measure were discarded.

In Sample A, both therapist and observer (who was always the experimenter) rated each session. In Sample B, either the observer or the therapist, but never both, completed the ratings. During four sessions, however, either the experimenter or the psychologist who conducted the groups in Sample A replaced one of the psychiatrists as the observer in Sample B. During these four sessions, both therapist and observer made ratings. Thus a complete measure of inter-rater reliability is possible with the criterion measure in Sample A, but only a sample reliability check is possible in Sample B.

Because shortage of personnel necessitated that many of the observations be made by the experimenter, the possibility of contamination arises at two points. First, the experimenter's memory of the Rorschach protocols which he gathered may have influenced his observations. Secondly, his observations may have influenced his scoring of any protocols which he consciously or unconsciously recognized. The criterion data gathered by the experimenter were therefore excluded from the results and the Rorschach data were submitted to an independent scoring. Data involving the experimenter are used only for reliability determinations.

RATIONALE FOR HYPOTHESES

Two principal classifications of content were previously delineated: Hostility and Mutilation content (HM), which is assumed to be related to the presence of aggressive drive; and Passive or Friendly, Guilt, Depressive, and Inadequacy content (PGDI), which is assumed to be related to the inhibition of aggression. The aim of the present study was to determine if

any relationship existed between these two types of content and overt verbal aggressive behavior. However, two possibilities exist with regard to such a relationship, which though not mutually exclusive, may lead to different predictions under certain conditions. HM and PGDI content may either be independently related to aggressive behavior, or these contents may be related to aggressive behavior primarily in terms of their relationship to each other. If they are independent, then the best estimate of the potentiality to act aggressively will be proportional to an appropriately weighted algebraic sum of the aggressive implications of HM content and the inhibitory implications of PGDI content. Multiple correlation performs this operation to optimal advantage. Moreover, accepting the opposing function of HM and PGDI with regard to the expression of aggression, an independent relationship implies that they must be oppositely correlated with aggressive behavior.

If, on the other hand, these contents interact in their relation to aggressive behavior, then the best prediction will be obtained by a function representing their interaction. One way in which these two types of content might be meaningfully inter-related is analogous to the balance of opposing tendencies in the conflict over the expression or inhibition of aggressive behavior. The ratio of content expressive of aggressive drive to all the content relating to either aggressive drive or inhibitory forces (i.e. $HM / (HM + PGDI)$) might then be viewed as an index of the threshold to aggressive behavior. If this particular interaction were the crucial factor, then it would be possible for this function to be positively related to aggressive behavior irrespective of whether either, both, or neither of these two types of content were themselves positively related to the expression of aggression.

It might be remembered that self

expression (SE) was proposed as a more accurate index of the total amount of interpretively meaningful content in the record. It might be expected, then, that Rorschach content variables expressed in terms of SE, rather than R, would show a higher relationship to the criterion.

ALTERNATIVE HYPOTHESES

1. *HM and PGDI content are independently related to aggressive behavior.*

Predictions:

- a. A positive correlation between HM/R and the criterion.
 - b. A negative correlation between PGDI/R and the criterion.
 - c. Maximal prediction is obtained with a multiple regression type equation.
2. *The relationship between HM and PGDI content is the crucial factor in relating this content to aggressive behavior and the ratio of HM content to HM + PGDI content is related to the likelihood that an aggressive impulse, when aroused, will be expressed rather than inhibited.*

Prediction:

A positive correlation between $HM/(HM + PGDI)$ and the criterion.

3. *The proportions of HM and PGDI contents in the record are more accurately represented in relation to SE than in relation to R.*

Predictions:

- a. HM/SE is more positively related to the criterion than HM/R.
- b. PGDI/SE is more negatively related to the criterion than PGDI/R.
- c. A higher relationship to the criterion is provided by a multiple regression* type equation employing HM/SE and PGDI/SE than one employing HM/R and PGDI/R.

RESULTS

Predictions

The results pertaining to the specific predictions outlined in the Hypotheses section are presented in Table I.

Prediction 1a: A positive correlation between HM/R and the criterion (see Row 1). This prediction is supported by the results. The combined

TABLE I—Coefficients of Correlation between Rorschach Prediction Variables and the Aggressive Rating Scale Criterion with Combined Confidence Levels for Both Samples.

Rorschach Prediction Variable	Sample A (N=15)	Sample B (N=23)	Combined p-value*
HM/R.....	.34	.41	.01
PGDI/R.....	-.06	-.28	.15
HM/R and PGDI/R†.....	.41	.56	.01
HM/(HM+PGDI).....	.25	.46	.02
HM/SE.....	.35	.47	.01
PGDI/SE.....	-.24	-.32	.05
HM/SE and PGDI/SE†.....	.45	.54	.01

Note: In Sample A, a correlation of .592 is needed for .01 level of confidence; .441 is needed for .05 level of confidence; .351 for .10 level of confidence; .235 for .20 level of confidence.

In sample B, a correlation of .482 is needed for .01 level of confidence; .352 is needed for .05 level of confidence; .277 for .10 level of confidence; .184 for .20 level of confidence.

* These values were obtained by combining the p-values of the results in each sample according to a method described in Mostellar and Bush (11).

† These coefficients were obtained by correlating the actual criterion scores with values predicted for the criterion from a multiple regression equation, derived in each case from the data of the opposite sample and then applied to the data of the same sample. The two Rorschach Prediction Variables indicated were the multiple predictors.

probability value reaches the .01 level of confidence.

Prediction 1b: A negative correlation between PGDI/R and the criterion (see Row 2). This prediction is not confirmed by results which reach an acceptable level of confidence, in either sample. The result in Sample B falls within the .10 level of confidence but, when the two samples are combined, the confidence level falls to .15.

Prediction 1c: Maximal prediction is obtained with a multiple regression type equation (row 3 greater than other rows except row 7). Sample B aggression ratings were predicted by means of the multiple regression equation computed on the Sample A data, and Sample A aggression ratings were predicted from the Sample B multiple regression equation. HM/R and PGDI/R were the two predicting variables. These predicted criterion scores were then correlated with the obtained criterion scores. The correlations so obtained are significantly higher than those obtained using HM/(HM + PGDI) (row 4).⁷ They are also higher than with either of the predicting variables alone (rows 1 and 2) or with HM/SE or PGDI/SE (rows 5 and 6). The difference between the correlations obtained with the predicted criterion scores and those with HM/R reached significance when the probability values in both samples are combined. The increase in correlation over HM/SE is not significant.

Prediction 2: A positive correlation between HM/(HM + PGDI) and the criterion (row 4). The correlation is significant in Sample B but not in Sample A. The combined probability is at the .02 level.

Prediction 3a: HM/SE is more positively related to the criterion than HM/R (row 5 greater than row 1). The differences were in the expected direction but small and not significant.

Prediction 3b: PGDI/SE is more

negatively related to the criterion than PGDI/R (row 6 greater than row 2). Again the differences are in the expected direction but not significant.

Prediction 3c: A higher relationship to the criterion is provided by a multiple regression type equation employing HM/SE and PGDI/SE than one employing HM/R and PGDI/R (row 7 greater than row 3). Using HM/SE and PGDI/SE in place of HM/R and PGDI/R in the cross-sample multiple regression equations did not result in any particular improvement. However, in comparison with the results stated in prediction 1c, a significant increase in the correlation with the criterion is found with this cross-sample multiple-regression equation employing SE over HM/SE alone (row 7 is greater than row 5).

Relationship of Specific Categories to the Criterion

The correlation coefficients between separate content categories on the Rorschach and ratings of aggressive behavior are presented in Table II. The highest relationships were found with mutilation content which reaches the .01 level of confidence in Sample B and the .10 level in Sample A.

Guilt, Depression, and Inadequacy content combined is also significant in Sample B but gives results in the opposite direction to the prediction in Sample A which increases the combined probability to a level which is no longer significant. The combined probability levels for Hostile content and Passive or Friendly content were, respectively, .12 and .08. The relationship shown by Depressive content are opposite in direction to what was expected but the correlations do not approach significance.

Reliability

Criterion Measures. The reliability coefficients of the criterion measure is presented in Table III. Two forms

TABLE II—Correlation Coefficients Between Separate Content Sub-categories and Average Aggression Ratings

Rorschach Content Sub-category	Sample A (N=15)	Sample B (N=23)
<i>Hostile Content</i>		
Tot. SE.....	.13	.28*
<i>Mutilation Content</i>		
Tot. SE.....	.42*	.51***
<i>Passive Content</i>		
Tot. SE.....	-.40*	-.14
<i>Inadequacy Content</i>		
Tot. SE.....	.12	-.13
<i>Guilt, Depression, Inadequacy Content</i>		
Tot. SE.....	.16	-.37**
<i>Hostile Content Responses</i>		
Responses.....	.41*	.49***
<i>Passive Content Responses</i>		
Responses.....	.33	-.56**
<i>Inadequacy Content Responses</i>		
Responses.....	-.42*	-.08
Guilt Content (Presence or Absence).....	.10	-.18
Depression Content (Presence or Absence).....	.18	.19

* Probability of a chance difference from zero correlation = .05 - .10

** Probability of a chance difference from zero correlation = .01 - .05

*** Probability of a chance difference from zero correlation = .01 or less

of reliability are presented: Intra-subject and Inter-rater. The first of these, Intra-subject, is the split-half reliability of the ratings of each subject and therefore represents the estimated stability of the mean criterion score, obtained over the number of sessions indicated. These reliability coefficients are .95 in Sample A and .91 in Sample B.

Inter-rater agreement, which involved comparison of the mean ratings over all the sessions observed in common, was quite high ($r = .89$) between the two psychologists in Sample A. It was possible to get independent ratings by one of the two psychologists during only four of the sessions in Sample B, which means that the inter-rater reliability data in this sample is not complete. Agreement between psychiatrist and psychologist observing Sample B ($r = .35$) was not nearly as good as between the two psychologists observing Sample A. This difference in level of agreement was highly significant (beyond the .001 level of confidence) and suggests that either a systematic difference, because of a somewhat differ-

ent frame of reference, or greater random error has entered into the ratings made by the psychiatrists. However, the random error could not have been very great in the overall sample in view of the high split-half reliability (intra-subject, above) of the psychiatrists' data.

Reliability of Rorschach Scoring

Coefficients of reliability for the various Rorschach variables and their combinations are presented in Table III. In each sample, there was one extremely long record. Scores of these subjects which were uncorrected for R were well separated from the rest of the scatter plot and, hence, dominated the covariance, spuriously raising correlations. Consequently the reliability coefficients of HM, PGDI, SE, and R, in Table IV, were computed without these two subjects. The full sample coefficients are given in a footnote. Of the variables actually used in prediction, the best reliabilities are obtained with HM/R and PGDI/R. Introduction of total self-expression (SE) reduces the reliability. It might be noted that, in spite

TABLE III—Reliability Coefficients for the Rorschach Scoring

Rorschach Variable	Sample A (15 Subjects)	Sample B (23 Subjects)
HM.....	.984*	.907*
PGDI.....	.919*	.881*
R.....	.980*	.998*
SE.....	.934*	.983*
HM/R.....	.94	.86
PGDI/R.....	.84	.80
HM/SE.....	.70	.78
PGRI/SE.....	.53	.84
HM/(HM + PGDI).....	.69	.80

* In each of the two samples there was one record of such great length as to be well separated from the rest of the correlational scatter plot. Consequently the reliability of the number of responses (R), or of any score highly related to R (i.e., HM, PGDI, and SE), will be spuriously inflated by the tremendous contribution of this single record to the co-variance in each sample. The reliabilities presented in the body of the table are, therefore, those calculated without these two deviant records. Including the records raises the reliability figures to .990, .996, .9992, and .996 in Sample A, and to .956, .936, .9991, .995 in Sample B, for HM, PGDI, R, and SE, respectively, in each sample.

of their greater unreliability, HM/SE and PGDI/SE are more highly correlated with the criterion than HM/R and PGDI/R. Correction for the attenuation due to unreliability in scoring would increase the margin of this difference even a little further. The correlation between HM/(HM + PGDI) and the criterion would also be improved in relation to the correlations obtained using either HM/R or PGDI/R.

CONFIRMATION OF HYPOTHESES

1. *HM and PGDI content are independently related to aggressive behavior.*

With the limitations in generalization imposed by the nature of the criterion situation and of the sample, an independent relationship between the proportion of HM content in the Rorschach and differences in at least one mode of expression of aggression has been demonstrated. An independent relationship of a lower order, between aggression and the proportion of PGDI content, is also suggested by the near significant results, and this content seems to contribute to prediction when a multiple regression equation is used.

2. *The relationship between HM and PGDI content is the crucial factor in relating this content to aggressive*

sive behavior and the ratio of HM content to HM + PGDI content is related to the likelihood that an aggressive impulse, when aroused, will be expressed rather than inhibited.

The evidence indicates that the particular function used in this study to inter-relate the two types of content is actually a poorer predictor than an appropriate multiple regression type of equation. However, this particular function, HM/(HM + PGDI), did predict significantly better than chance.

3. *The proportions of HM and PGDI contents in the record are more accurately represented in relation to SE than in relation to R.*

None of the predictions related to this hypothesis were confirmed by a significant difference although, with only one exception, the correlations obtained using SE exceeded those obtained using R as a base.

DISCUSSION

The results of this study further indicate and define the potential validity of the content of Rorschach responses as a source of information about the personality of the Rorschach examinee. The correlations obtained in this study are too small to be used for practical individual prediction of behavior. However, the

possibility of using projective material, and Rorschach content in particular, to make explicit predictions about overt behavior is suggested.

Two questions are posed by the results. First, can the discrepancies, between the results of studies by Elizur (6) and by Sanders and Cleveland (18) and the results of other studies (including the present one), be accounted for? Secondly, what are the limitations to the generalization of the present results? For answers to these questions, the scoring and classification of Rorschach content, the criteria employed, and the nature of the subject population must be considered. The discussion of these two questions will not be sharply separated in what follows.

The schema for analysis of aggressive Rorschach content (HM) used in this study, though more extensive, is most similar to that developed by Elizur and used in the studies by Sanders and Cleveland, and Gorlow, Zimet, and Fine (9). In spite of this, the studies by Elizur and by Sanders and Cleveland are the only two studies reporting an inverse relationship between aggressive content and aggressive behavior, in contradiction to the findings of the present study and other previous studies. The study by Gorlow, Zimet, and Fine was generally supportive of a positive relationship between content and behavior. The scale of aggressive content developed by Walker (25), by Finney (8), and by Towbin (23), contain considerable content which would be classified as P, G, D, or I in the present study (e.g., "torn flower," "drunk who fell on his back," "people with dunce caps on," "a rabbit running away," "a man sick with disease," "flea," "decaying," etc.) These differences are sufficiently marked in the case of Finney's scale to account for his comparative lack of results. It also points up the possibility that the PGDI content used in the present study may contain conflicting or invalid items which would

account for its lack of relationship to aggressive behavior.

In contrast to previous studies concerned with predicting overt forms of aggression, the criterion in the present study was concerned with a much milder form of aggression and with a purely verbal, as opposed to a physical expression of aggression. Also the situation differed in that the criterion behavior in the previous studies, assault, was invariably discouraged whereas, in the present study, the verbal venting of hostile feelings was permitted, if not encouraged. However, the fact that this study fits in with the majority of findings, particularly when the nature of the subject population is considered (see below), suggests that, with at least certain types of subjects, a positive relationship between aggressive content on the Rorschach and aggressive behavior may hold true with respect to a fairly wide variety of situations and modes of aggressive expression. Despite all the complicated factors determining aggressive behavior in the prison situation, it seems reasonable that individual differences in drive and ability to express aggression will contribute to aggressive behavior in this situation as well as in many other types of situation.

Differences in the type of subjects used may partially explain the striking differences obtained between the results of the present study, that by Stormont and Finney (21), by Finney (8), and by Towbin (23), as compared with those obtained by Sanders and Cleveland (18) and predicted by Elizur (6) on the basis of his results. Finney, Stormont and Finney, and Towbin found a positive relation between aggressive content and overt aggressive behavior in a group of largely psychotic patients. In this group, in other words, many of the ego (or superego) controls had broken down. On the other hand, the graduate psychology student subjects of Sanders and Cleveland, and the

thirty student volunteers used as subjects by Elizur, could be expected to have predominantly the type of defense-structure in which control is particularly emphasized. The prison inmate population of the present study, while not overtly psychotic, has nonetheless demonstrated certain deficiencies in impulse control by committing the antisocial acts, usually a long history of them, which led to their incarceration. In this respect they may be more like psychotic patients than like the presumably well-controlled college and graduate school students. In the psychotic and prison group, where at least some disturbance in the capacity to control impulse expression can be assumed, one would expect that aggressive drive would achieve overt expression in proportion to its strength. With both a strong need to control and a strong ego, however, one would expect powerful aggressive impulses to arouse still more powerful defensive measures and greater reaction formation. Thus, with poor control one may find a positive correlation between content (which was earlier hypothesized to be an index of underlying drive) and behavior, while with strong control one may find a negative correlation.

A study by Clark (2) lends support to such a formulation. He found that his male student subjects expressed significantly less sexual content in their Thematic Apperception Test productions after being stimulated by pictures of nude women than a group not exposed to the nude pictures. However, under the influence of alcohol, which is known to loosen ego controls, these results were just the reverse. Thus, under alcohol an increase in sexual drive leads to an increase in verbalized sexual fantasy, whereas increased drive results in a decrease in such fantasy without alcohol. If the verbalization of sexual fantasy is equated with overt aggressive behavior, on the basis that both are expressions of culturally disap-

proved drives, the implications of Clark's study are clear.

The general socio-cultural background of the prison population may also be important in explaining the high relationship found between aggressive content alone and aggressive behavior in this study. Many of these men were raised in an environment which not only condones overt aggression, but in many instances encourages it (3). Consequently, aggressive behavior is probably much more ego-syntonic in this group as a whole than in most other groups and the men behave more nearly in accordance with the strength of their aggressive drives. On the other hand, passivity would probably be much less acceptable in this group than in most other groups. Thus, it might be expected that those inmates who had strong aggressive drives would tend to express them, but that many of those without particularly strong basic aggressiveness might behave in a more assertive, aggressive manner as a reaction against the passive trends in their personality. This leads to the prediction that there would be a greater relationship between the Rorschach Scores and the criterion among those subjects who gave a lot of aggressive content (i.e., are basically aggressive) than in those who have relatively little aggressive content (i.e. are not basically aggressive). Splitting at the median of HM/SE provided four groups in the two samples, two with high aggressive content and two with low aggressive content. The high aggression groups in Samples A and B, respectively, produced correlations of .24 and .64 between HM/SE and the criterion. The corresponding correlations in the low aggression groups were .13 and .43. These differences between high and low Rorschach aggressive content groups are not significant. Also, since the relative stability, and hence reliability, of the larger proportions will be greater, a better relationship with the criterion would be expected for that reason

alone. However, it was further noted that, of the seven cases in the two samples in which the standard score of the criterion was more than one standard deviation greater than the standard score for HM/SE (i.e., behavioral aggressiveness exceeded Rorschach aggressiveness), six were at, or above, the median in the proportion of content scored in the passive category classification. These results, while by no means conclusive, are mildly suggestive. These considerations underline the importance of interpreting projective test data in relation to the socio-economic background of the subject (see also 13).

SUMMARY

The present study sought to relate the content of the Rorschach response to overt aggressive verbal behavior through an approach utilizing both aggressive content and content believed to reflect inhibitory forces in the personality. In addition to its content significance, each response was scored for the degree of self-expression implicit in it. Only records which were sufficiently productive to attain a self-expression score of 10 were used. The subjects were 38 state prison inmates and the criterion was behavior in therapeutic discussion groups. The following results were obtained:

1. The proportion of aggressive content, particularly that dealing with Mutilation content, was significantly positively related to aggressive behavior although the relationships were not high enough for precise individual prediction.
2. The proportion of inhibitory content was inversely related to aggressive behavior but not to a significant degree (the .15 level).
3. A multiple regression type of equation, developed independently of the sample to which it was applied, predicted significantly better than an equation which would reflect an interaction between aggressive and

inhibitory content.

4. Improvement in prediction, when the total self-expression score was substituted for the number of responses in calculating the proportion of all content which was aggressive or inhibitory, failed to reach statistical significance. However, inhibitory content was significantly inversely related to aggressive behavior when total self-expression was used in obtaining the proportion.

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Rorschach Findings in a Group of Peptic Ulcer Patients and Two Control Groups¹

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As part of an investigation of the personality factors of dependency and over-compensatory goal striving behavior associated with the development of peptic ulcer the Rorschach was administered to fifteen peptic ulcer patients, fifteen psychoneurotic patients, and a like number of subjects classified as normal. At the time the study was undertaken, the temper of psychological studies with the Rorschach test was predominantly statistical in approach. The investigator, adhering to the times, attempted to isolate ulcer patients from the two control groups by analyzing the data in statistical terms. A few clinical departures were attempted in an effort to study content material and analyze the quality of M and FM responses. However, a case by case study could not be done, and the qualitative data was also subjected to statistical treatment. To overcome the loss of what Piotrowski calls the "interdependence of components" (7, p. 80), the author submitted the Rorschach protocols along with other test data to two judges who rated each case according to a devised rating list. This aspect of the study is not pertinent to the present paper and will be discussed in a future paper.

The present paper is meant to be a critical analysis of attempts made to

treat the Rorschach statistically and graphically without full regard for the essential "rule" of Rorschach interpretation, that every symbol has a conditional or variable meaning and is dependent upon other symbols for a complete interpretation.

Though there have been many studies of the psychological factors associated with the development of peptic ulcer, the literature does not indicate that the Rorschach was ever used prior to the report of Ruesch and his coworkers (8) in 1948. Since then, Brown, et. al. (3), Hecht (4), Osborne and Sanders (6), Brennan (2), have all used the Rorschach in the study of peptic ulcer. A brief review of their work indicates that few group studies have proved the use of the Rorschach test to be of value in differentiating one group from another.

It was the author's intention to investigate the "primary conflict" situation of ulcer patients as described by Alexander and others (1). Briefly, Alexander hypothesized that ulcer patients show intense receptive and acquisitive wishes against which they fight internally because the wishes are connected with extreme conflict in the form of guilt and feelings of inferiority. Tendencies toward overactivity, efficiency, and ambitious effort are compensations to mask the strong dependent wishes. Three hypotheses were put to the test, namely,

a) Peptic ulcer patients express significantly more dependency needs than normal and psychoneurotic patients.

b) The dependency needs of peptic ulcer patients are significantly less acceptable to them than are the dependency needs of the control groups.

¹ This paper is based on a doctoral dissertation submitted to the department of psychology, New York University in 1951. The study was discussed at the meetings of the A.P.A. in New York City, September 1954. Grateful acknowledgment is due Dr. B. Tomlinson and other members of the supervisory committee, Dr. R. Morrow and his staff at the Bronx VA hospital, New York, N. Y. for their help and cooperation. The author's views are his own and in no way reflect the opinion of the Navy Department or the VA.

c) Peptic ulcer patients substitute a facade of overcompensatory goal striving activity to mask their feelings of inadequacy associated with dependency needs whereas the control groups do not.

METHOD

The subjects were selected from the General, Medical, and Surgical wards of the Kingsbridge VA hospital in New York City. They were chosen from the white population and were native born citizens of the United States with the ability to read and write English. Their ages ranged from twenty-two through forty-five years. The selection of patients was not limited to age, education, religion, marital status or an occupational group. Still, there were no significant differences with respect to these factors among the three groups. The experimental group consisted of fifteen peptic ulcer patients, whose ulcers were demonstrated by X-ray data and diagnosed as such by the ward physicians. None had a history of central nervous system trauma or disease. The two control groups were non-ulcer patients. One control group of fifteen patients was selected with the understanding that the patients had never had a peptic ulcer or a history of psychoneurosis. After each subject had satisfied the criteria established in the Cornell Selectee Index (9) this group was considered the "normal." The group was selected to equalize the effects hospitalization may have had on the experimental group and as a base line of reference. Whereas the normal group was comprised of patients with minor surgical problems, the other control group was comprised of fifteen patients selected because of a history of psychoneurosis without organic lesion. The neurotics were chosen to determine whether or not the dynamics under investigation were also typical of them inasmuch as numerous authors regard the ulcer patient as psychoneurotic.

The Rorschach was given each of

the forty-five subjects. The Klopfer and Kelley (5) scoring technique was followed. Tabulations were made according to 35 variables established by the Klopfer method of scoring. In addition calculations were made according to the number of patients in each group for whom the various Rorschach signs and ratios were present.

There were several signs and variables introduced by the author which require explanation. In Table I *All Shading* includes Fc, Fk, KF, and FK responses. *All Objects* include Obj., AObj. The *Content Denoting Ego Strength* refers to the number of responses which suggest power, aggression, greatness, status, striving, masculinity, i.e., such associations as crowns, eagles, lobsters, bats, fire, dogs, bears, monsters, emblems, wolves, men, or any percept seen as large and strong. On the other hand, the *Content Denoting Passivity* refers to the number of responses suggesting weakness, dependence, femininity, i.e., responses such as butterflies, cows, babies, cubs, moths, flowers, scenery, vases, women, anatomy, or percepts seen as small and weak. Extensor movement and flexor movement concepts refer to assertive and passive projections of phantasy respectively.

RESULTS AND DISCUSSION

The tables tell the story of the fruitless effort to evaluate group data with the purpose of distinguishing one nosological group from another by a quantitative analysis. One hundred five comparisons were made with respect to the 35 quantifiable signs shown in Table I. The groups were found to be significantly different from one another in only five of the quantifiable signs. A total of seven significant differences was obtained with respect to these five signs (see Table II). This total is too small a number of significant differences to be important since it could occur by chance alone. In any one hundred "t"

TABLE I—Means (M) and Standard Deviations (SD) for the Quantifiable Rorschach Test Data for the Ulcer, Normal, and Psychoneurotic Groups

Sign	Ulcer		Normal		Neurotic	
	M	SD	M	SD	M	SD
R.....	16.80	7.99	23.80	7.99	22.07	8.08
W, WS.....	5.33	2.67	4.93	4.33	4.33	2.37
D, DS.....	10.60	3.35	15.53	8.35	14.87	5.26*
d, dd, etc.....	1.07	1.89	2.93	3.69	3.07	4.37
All S.....	.93	2.05	1.13	2.05	.80	.45
F.....	7.53	5.46	12.00	8.25	10.47	5.29
M.....	2.33	2.21	2.40	1.93	2.40	2.21
FM.....	3.60	1.36	4.47	2.19	3.60	1.99
m.....	.73	1.24	.40	.71	.53	.62
All Shading.....	1.40	1.25	1.93	1.57	2.80	2.17*
FC.....	.73	.93	1.13	1.41	1.20	1.17
CF.....	1.33	2.02	1.60	1.45	1.67	1.57
C.....	.33	.59	.20	.54	.20	.40
H.....	1.33	1.25	1.53	1.52	2.00	1.71
A.....	7.20	2.96	8.13	3.44	6.93	2.74
Hd.....	1.47	3.14	2.47	2.86	2.20	2.17
Ad.....	1.53	1.25	3.93	4.07	2.80	1.97*
All Objects.....	2.13	2.06	2.73	3.11	3.73	2.79
At, X-ray.....	.93	1.06	1.80	1.87	1.47	1.31
Nat., Bot., etc.....	1.53	1.91	2.20	1.80	2.00	1.46
F.....	5.60	1.45	5.13	1.36	5.67	1.47
F%.....	44.51	16.43	47.13	12.04	45.98	14.09
F+ %.....	90.25	10.09	90.41	8.74	92.78	9.10
% VIII-X.....	33.81	8.20	38.27	6.94	32.86	15.33
Av. r.t. Achr'tic.....	17.20	9.15	16.97	10.55	19.20	11.70
Av. r.t. Chr'tic.....	19.83	4.94	16.72	9.19	25.28	16.49
A%.....	58.89	20.05	51.57	11.14	47.15	19.86
H%.....	13.90	11.09	16.33	9.20	18.31	13.04
W%.....	32.55	14.52	25.21	18.05	22.93	18.28
Content denoting Ego Strength.....	6.47	2.99	9.87	5.13	8.81	4.01*
Content denoting Passivity.....	9.60	6.30	12.20	6.50	11.60	4.20
Extensor M.....	.93	1.24	1.07	1.00	.93	1.18
Flexor M.....	1.27	1.34	1.07	1.00	1.47	1.26
Extensor FM.....	2.27	1.44	2.07	1.39	2.13	1.46
Flexor FM.....	1.13	.89	1.67	1.13	.67	.85*

* There are significant differences among the groups for these quantifiable signs.

TABLE II—t Test Values for those Quantifiable Rorschach Signs Showing Significant Differences Among the Three Groups

Sign	Ulcer-Normal	Ulcer-Neurotic	Normal-Neurotic
D, DS.....	2.08*	2.54**	.25
All Shading.....	.98	2.12*	1.22
Ad.....	2.14*	2.05*	.98
Content denoting Ego Strength.....	2.16*	1.77	.62
Flexor FM.....	1.42	1.40	2.73***

* Significant at the .05 level

** Significant at the .02 level

*** Significant at the .01 level

tests made, five could reach the .05 level, two the .02 level, and one the .01 level. What then have we achieved? Two of the seven differences would have meaning.

Let us examine the sign D, DS for example. The ulcer group gave fewer

such responses than did the normal and the psychoneurotic groups. According to standard interpretation this would signify that the ulcer group uses less common sense in the handling of daily routines, a finding which would fit in with what we

know of persons suffering from ulcers. However, this is not a significant figure when the number of D, DS responses is interpreted in terms of the total number of responses given by each group. The percentage of D re-

sponses given by all groups was quite similar, for the ulcer group 63, for the normal group 65, and for the psychoneurotic group 67. Thus the fewer absolute number of D, DS responses given by the ulcer group cannot be

TABLE III—The Number of Patients in Each Group for Whom the Various Rorschach Signs were Present

Sign	Ulcer	Normal	Neurotic
Card Rejection.....	6	6	3
Blood.....	3	4	3
Fire, Flame, Explosion.....	6	1	4
Map.....	4	4	4
Cloud.....	2	4	3
Food.....	4	4	3
Combinatory W.....	9	8	5
W:M ratio			
W>2M.....	9	7	5
W<2M.....	4	6	8
W=2M.....	2	2	2
M: sum C ratio			
Coarcted.....	3	0	1
Ambiequal.....	2	4	2
Predominantly M.....	6	5	5
Predominantly C.....	4	6	7
H+Hd:A+Ad			
A+Ad>2 H+Hd.....	10	14	9
A+Ad=2 H+Hd.....	3	0	1
A+Ad<2 H+Hd.....	2	1	5
W% greater than 30%.....	11	5	2
A% = 50% or greater.....	9	11	7
H% = 20% or greater.....	5	7	8
Extensor M:Flexor M			
Extensor>Flexor.....	2	1	3
Extensor<Flexor.....	4	2	0
Extensor=Flexor.....	2	3	5
Coarcted.....	7	9	7
Extensor FM:Flexor FM			
Extensor>Flexor.....	6	4	6
Extensor<Flexor.....	0	2	0
Extensor=Flexor.....	4	6	4
Coarcted.....	5	3	5
Passive Percepts:Ego Strength Percepts			
Passive>Ego Strength.....	10	8	10
Passive<Ego Strength.....	1	3	1
Passive=Ego Strength.....	4	4	4

TABLE IV—P Values Obtained in the Evaluation of Differences in the Incidence of Various Signs

Sign	X ²	df	P*
Card Rejection.....	1.80	2	.50>P>.30
Combinatory W.....	2.31	2	.50>P>.30
W% greater than 30%.....	11.67	2	.01>P>.001
A%=50% or greater.....	2.22	2	.50>P>.30
H%=20% or greater.....	1.25	2	.70>P>.50

* Chi square cannot properly be applied whenever the hypothetical frequency for any cell in the matrix becomes too small, i.e., less than five. This limitation in the use of Chi square prevented the calculation of significance tests in certain cases.

TABLE V—P Value Obtained in the Evaluation of Differences in the Incidence of Various Rorschach Ratios

Ratios Compared	X ²	df	P
W:M			
W>2M and W<2M.....	2.48	2	.30>P>.20
W>2M and Other W:M.....	2.14	2	.50>P>.30
M:C			
Predom M and Predom C.....	.78	2	.70>P>.50
Predom M and Other M: sum C.....	.20	2	.95>P>.90
Predom C and Other M: sum C.....	1.32	2	.70>P>.50
Extensor M: Flexor M			
Coarcted and Other M types.....	.71	2	.70=P
Extensor FM: Flexor FM			
Extensor>Flexor and Other FM.....	.77	2	.70>P>.50
Passive: Ego Strength Percepts			
Passive>Ego Strength and Other types.....	.76	2	.70>P>.50

construed as really meaningful.

There was a significant difference between the ulcer and the psychoneurotic groups with respect to the use of shading. The psychoneurotics gave twice as many shading responses as did the ulcer group. An abundance of shading concepts is considered to be indicative of anxiety, uncertainty, of a feeling of being exposed to danger, of considering the environment to be hostile, and of doubt concerned with the most suitable method of restoring security. This difference among the two groups is quite plausible if it can be construed as meaningful. The attempt to see a close kinship between the ulcer group and the psychoneurotic group, which some authors have made, is not supported. One would expect that ulcer patients convert their anxiety so that it is not obvious in the same way that psychoneurotics manifest their feelings.

In Table I, Ad stands out as an important variable because the groups were found to be dissimilar on this score. The relative lack of Ad in the ulcer group would suggest that these subjects were less critical toward the form qualities of the blots than were the other two groups. If one were to generalize, it would be possible to say that the ulcer group was less critical because it was too inclined toward making generalizations. However, this would be stretching the point too far. At best one can say very little about

the meaning of the "significant" Ad finding.

One would expect the ulcer patients to project their desires for power, prestige, greatness, achievement, strength and aggressiveness onto the blots. The results of the mean number of such percepts called *Content denoting Ego Strength* indicate otherwise. As can be seen in Table I, the normal group gave significantly more such percepts than the ulcer group. To make this finding meaningful, one would have to say that the normal subjects were inherently more assertive and have more ego strength than the ulcer patients. If one observes the conscious efforts of the ulcer patients to prove their worth this result introduces a note of confusion. Why don't they show more assertiveness in their Rorschach concepts? Is the content material of an unconscious variety? One would have to think so if the finding is to be interpreted logically and in a meaningful way. Though one would expect the ulcer patients to project more of their need for independence and assertiveness, they manifested less of it in comparison with normal subjects. This would imply that they are motivated in a compensatory way, so that while they appear to be strivers, striving is not an intrinsic, basic characteristic of their personality structure.

The psychoneurotic group offered significantly fewer passive, dependent

FM responses than did the normal group (as noted in Table II), but was not different from the ulcer group. It is too isolated a finding to fit into any particular scheme even in terms of the dynamics involved in the psychoneurotic problem. An effort to explain this finding in dynamic terms as to its meaning in relation to the three groups under investigation yields nothing but jargon phrases and tautological thinking, unless one challenges the currently accepted interpretation of FM responses.

Of all the signs listed in Table III, one significant finding is obtained, namely, that there is a greater number of ulcer patients whose W% exceeds 30%. This isolated finding is in harmony with the expected results. Ulcer patients are more concerned with demonstrating ambition, drive and achievement.

The results obtained when quantified Rorschach scoring symbols are used to compare one nosological group with other groups are discouraging. Few significant differences emerge that are useful and related. It would seem, consequently, that the Rorschach method is a fruitless technique when used quantitatively. Quantification eliminates and/or destroys the dynamic picture of personal forces, defenses, sequences and balances that may be observed when the Rorschach is studied as a gestalt.

SUMMARY

An attempt has been made to show that the Rorschach technique is not a quantifiable tool in the usual sense, and that when it is so utilized to differentiate specific character structures the positive results are minimal. Several hypotheses based on the description by Alexander and others of the

personality pattern of ulcer patients were considered. A group of peptic ulcer patients and two control groups were used. Of one hundred and five comparisons made on the basis of various Rorschach signs only seven significant differences were obtained. Of sixteen other ratios tested by the chi-square technique, one was significant. Some of the findings in part uphold the hypotheses under investigation, but, as with the earlier Rorschach studies cited, it would be necessary to force many meaningful interpretations or to resort to tautological reasoning and/or challenge the very essence of the Rorschach test if the quantitative technique is used.

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A Comparison of Several Measures of Psychosexual Disturbance^{1,2}

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The purpose of this study is to report on the performance of a large group of patients on three different measures of psychosexual confusion. The techniques selected in this investigation are all methods which many clinicians regard as providing important information concerning the adequacy in the identification with and acceptance of one's sexual role. The projective devices which were employed are the human figure drawing technique and the M. R. Harrower Psychodiagnostic Inkblots. The choice of the Harrower blots in preference to the standard Rorschach series was prompted by the fact that we intended to save the latter device without prior contamination for actual diagnostic purposes. Inasmuch as the Harrower blots are purported to represent a series of stimuli which are parallel to the Rorschach blots, it was thought that their use in this research was justified and that conclusions relating to one series of blots would probably be equally germane to the other. In addition to these projective measures, an objective scale developed by Gough (3), and allegedly capable of assessing masculinity or femininity of interests, was also administered.

It has been a common practice of clinical psychologists to assign interpretative significance to the sex of the figure drawn first on the Draw-a-Person Test. The underlying hypothesis is that an individual who draws the opposite sex first is suspected of having a serious disturbance in psychosexual identification and one who

draws a figure of his own sex first does not. However, an extensive review of the relevant literature by Brown and Tolor (1) led to the conclusion that sweeping interpretative generalizations which are based solely on this particular aspect of the figure drawing technique seem unwarranted. Similarly, it is a general practice among clinicians to assign dynamic significance to the sex which the patient ascribes to the people which he perceives in the ambiguous stimuli of inkblots, particularly the popular figures on card III. The male patient, in this theoretical formulation, is thought to manifest signs of an inadequate or confused sexual identification if he perceives the popular figures on card III as something other than two male figures (6, 10, 12). The question arises as to whether these two measures of sexual disturbance are highly related to one another, i.e., whether a tendency to draw a figure of the opposite sex is in fact frequently associated with the tendency to make an opposite-sexed identification in the inkblots. Another related problem that seems worthy of attention is the ascertaining of whether these two projective measures of psychosexual orientation are in any way related to the results obtained from a third but objective measure of masculine-feminine interests, such as the Gough scale.

METHOD

The subjects comprising the experimental population were 122 consecutive U. S. Air Force male recruits in various stages of their basic training. Each of these airmen had been referred to the Mental Hygiene Clinic at Parks Air Force Base in California for evaluation of his adjustment problems. When an analysis of the

¹ The opinions and conclusions expressed by the author do not necessarily represent those of the Department of the Air Force.

² This paper was presented at the 1957 meeting of the Western Psychological Association.

final diagnoses of these patients is performed, one finds the following psychiatric conditions represented in the sample: immaturity with symptomatic habit reaction, manifested by a history of enuresis³ extending at least to the age of 15 years—38; emotional instability reaction—48; inadequate personality—13; no specific psychiatric disease—10; schizoid personality—6; anti-social personality—2; asocial personality—2; sexual deviate, overt homosexuality—2; and schizophrenic reaction, not elsewhere classified—1. The age range of this sample is 16 to 25 years, the median age being 18. As for the educational level attained, the range is 7 to 16 years, with a median of 11 years.

These patients had been referred to the Mental Hygiene Clinic by various sources on the base including other medical installations (flight surgeon's office, dispensaries, and medical officer on duty at night or over weekends), organization commanders, chaplains, and stockade officials. Prior to interviewing by either psychiatrist, psychologist, or psychiatric social worker,⁴ each of the patients was seen by one of the enlisted technicians on the clinic staff who routinely administered the figure drawing test, card III of the Harrower Psychodiagnostic Inkblots, and the Gough Femininity scale in individual testing.

On the figure drawing test patients were initially requested to draw a person and upon completion, to make a person of the opposite sex on a new sheet of paper. On the inkblot test the instructions accompanying card III were the same as are generally considered standard on the Rorschach. All responses were record-

ed verbatim. In those instances in which patients spontaneously identified the lateral large areas of the blot as people of a specific sex, no further inquiry was necessary. However, when no reference was made to the sex of the figures, further probing was attempted. Whenever a patient failed spontaneously even to identify the lateral areas as people, the examiner informed the patient that such a response is frequently given and determined whether the patient would acknowledge two human figures. In case a human concept was finally conceded, an attempt was then made to have the patient identify the sex.

RESULTS

An analysis of the frequency with which like-sexed and opposite-sexed figures are drawn indicates that of the basic trainees tested 87% made figures of the same sex first as compared to 13% drawing a figure of the opposite sex first. Since the absence of clothing in human figure drawings is often interpreted as suggesting the presence of a pathological self-preoccupation and "body narcissism" (2, 4, 7, 8), the data on the number of patients drawing nude and clothed figures were also obtained. It was noted that 75% of the patients drew both figures clothed. Table I presents data indicating that there is little difference in the frequency with which nude and clothed figures are portrayed by patients drawing the same sex first as compared to those drawing the opposite sex first.

TABLE I — Frequency With Which Nude Figures Are Made by Patients Drawing the Same and the Opposite Sex First.

Figures Drawn	Sex Drawn First	
	Same (N = 106)	Opposite (N = 16)
	(In Percentages)	
Both Clothed	76	69
Both Nude	17	25
Only Female Nude	4	6
Only Male Nude	3	0

³ A number of other patients presented a history of enuresis but were assigned different diagnoses which were thought to reflect more accurately the overall symptomatology.

⁴ Appreciation is extended to Dr. Simon Dorfman, psychiatrist and officer in charge of the clinic, and to 2nd Lieutenant John E. Davis, psychiatric social worker, for their cooperation in this project.

With respect to card III of the Harrower inkblots, 70% of our sample of trainees spontaneously offered some type of human response to the usual area of this card. The other 30% did not initially perceive a human figure in this blot, and 7% failed to acknowledge the possibility of a human concept even when it was specifically suggested in the testing of the limits phase of the presentation.

As for the sex of the figures visualized, 40% of the sample regarded them as being two male figures, 24% thought they were both females, 18% considered one of the pair as male and the other as female, and another 18% was unable to arrive at any specific sexual differentiation whatsoever even when specifically urged to do so. Thus, a total of 60% of our sample interpreted the popular human figures as something other than two males. If one were to accept the projective test postulate that individuals who do not perceive the popular figures on card III as being of the same sex as themselves have serious problems relevant to their sexual identification, then a very high proportion of this patient population would be so characterized.

The quality of the human movement response is also believed to be related to the personality variables of ascendancy (masculinity) and submission (femininity) (5, 6, 9, 11). In the present investigation no special effort was made to determine which of the human responses represented associations of the human movement type as no inquiry was conducted for this purpose. However, when only those spontaneous responses are considered in which patients make it explicit without any further prompting that they are using M, 21 self-assertive, 2 compliant, and 1 indecisive response are obtained. Thus, we are faced with the surprising finding that although the majority of patients meets the criterion of sexual confusion in misidentifying the

figures on card III, most of these same patients utilize the type of M which is classified as being assertively masculine.

The mean Gough scale score for the sample was 28.9 (S. D. 5.4). In comparison to Gough's male criterion group, in which the reported mean score is 24.8 (S. D. 4.6), a greater degree of psychological femininity is indicated for the present population, the difference being highly significant ($t = 6.8, p < .001$). Thus, this scale, in contrast to the figure drawing technique but in line with the Harrower inkblots, suggests a marked degree of psychological femininity in this sample of referred basic trainees.

There is no significant difference in mean Gough scores earned by patients drawing a male figure first and those drawing a female figure first. The respective means are 29.0 (S. D. 5.3) and 28.4 (S. D. 5.4). Similarly, the Gough scale scores fail to disclose any significant differences between patients identifying the figures on the inkblot test as males and those not doing so. The former achieve a mean score of 28.8 (S. D. 4.9), the latter obtain the identical mean of 28.8 (S. D. 5.9). When patients falling at the extremes in the Gough score distribution are compared with respect to the frequency with which they draw the same and the opposite-sex first, one finds no significant differences between groups (see Table II). Table III also reveals that there is no significant relationship between those

TABLE II—Femininity Scores and Sex of First Drawing

Gough Score	Figure Drawn First	
	Male	Female
35 & above (N=23)	21	2
23 & below (N=25)	22	3

patients falling at the extremes in the Gough score distribution and the sex ascribed to the figures on card III of the Harrower blots. These findings seem to establish quite convincingly the absence of any significant

relationship between Gough scale scores of femininity and the simple factor of which sex is drawn first, and between Gough scale scores and which sex the patient attributes to his inkblot figures.

TABLE III—Femininity Scores and Sex of Figures on Card III.

Gough Score	Figures in Inkblot Perceived As	
	Both Males	Other
35 & above (N=23)	7	16
23 & below (N=25)	7	18

Table IV presents data on the relationship between the tendency to draw the like or the opposite sex first and the type of sexual identification made of the figures on card III. There is no statistically significant association between these two variables either.

TABLE IV—Relationship Between the Sex of the First Drawing and the Inkblot Figures.

Figure Drawn First	Figures on Card III Identified as			
	Both Males		Other	
	(N)	(%)	(N)	(%)
Male	44	41.5	62	58.5
Female	5	31.2	11	68.8

CONCLUSIONS

Within the limitations of the experimental procedures and sample used, the data obtained indicate that these three measures of adequacy of psychosexual adjustment are entirely unrelated, cannot be used interchangeably, and apparently reflect different psychological functions. As a rule, the clinician therefore is not justified in expecting to find the same male patient drawing a figure of the opposite sex first, identifying the popular figures on card III as female, and scoring high in femininity on the Gough scale. No two of these indicators are significantly related to one another. If for the sake of discussion one were to accept the validity of these instruments insofar as

they may indicate acceptance or rejection of sexual role, then it would appear that the observation of which sex is drawn first represents a far less sensitive device than the observation of which sex is ascribed to the inkblot figures. It is even conceivable that the latter is a hyper-sensitive measure of psychopathology, pointing toward sexual ambiguity when no other clinical corroborative evidence exists. In any case, because of the methodology employed here one cannot draw any definitive conclusions concerning the relative efficacy of these three different methods for detecting ambiguity in sexual identification.

SUMMARY

A sample of 122 U. S. Air Force basic trainees, who had been referred to a mental hygiene clinic for evaluation of their adjustment problems, was requested to take the human figure drawing test, to respond to card III of the Harrower Psychodiagnostic Inkblots, and to complete the Gough scale of psychological femininity. The performance of the patients on these three selected measures, which are presumed to be capable of determining level of psychosexual functioning, was subjected to analysis.

Among the findings, the following appear to be the most important: (1) 87% of these patients draw the male figure first; (2) 60% interpret the popular human figures on the inkblot test as something other than two males; (3) the mean Gough scale score for the sample indicates far greater psychological femininity in these patients than in a comparable normal criterion group; (4) there is no significant relationship between any two of the selected measures.

It is concluded that these three measures of adequacy of psychosexual adjustment cannot be used interchangeably as they are entirely unrelated and appear to reflect different psychological functions. The relative validity of each should be further evaluated.

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An Exploration of Relationships between Manifest Anxiety and Selected Psychosexual Areas

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The concept of anxiety is of primary importance in the investigation and understanding of personality. The variety of theory seems to indicate that anxiety is a painful affective state which is produced by actual or imagined threats to the ego (7, 8, 11, 12, 13, 15). Within this body of theory, several authors (9, 11, 12, 22) have related anxiety to specific areas of threat. However, there is a need for further experimental investigation of these relationships.

The purpose of this study was to explore the relationship between "manifest anxiety" and some specific areas of psychosexual conflict. Manifest anxiety was operationally defined in terms of Ss' performance on a questionnaire (6) purporting to measure anxiety. Specific areas of psychosexual conflicts were limited to Ss' performance on the Blacky Pictures (3). The psychosexual areas studied included: oral eroticism, oral sadism, anal expulsiveness, anal retentiveness, oedipal intensity, masturbation guilt, castration anxiety, positive identification, sibling rivalry, guilt feelings, positive ego ideal, narcissistic love object and anacritic love object.

In addition to the exploration of relationships between manifest anxiety and specific areas of psychosexual conflict, an attempt was made to answer the following questions: (a) Was there a relationship between the degree of manifest anxiety and the number of areas of problems? (b) What areas of psychosexual conflict were most common to the delinquent Ss? (c) Were there significant differences in psychosexual conflicts between white, Negro and Puerto Rican Ss?

SUBJECTS

The Ss consisted of 57 delinquents at the New York State Training School for Boys at Warwick, a residential institution for adjudicated delinquents. Twenty boys were white, 19 were Negro and 18 were of Puerto Rican origin. Thirty-five Ss were Catholic, 22 were Protestant. These Ss were matched so that there were no significant differences between whites, Negroes, and Puerto Ricans in age and intelligence as measured by the Wechsler-Bellevue. The average age of Ss was 14 years, 2 months with a range from 12 years, 3 months to 16 years, 0 months. The range of intelligence scores was from 65 to 120 with an average of 83. All Ss were from deprived socio-economic backgrounds. The two most common offenses which resulted in the Ss' commitment to the training school were truancy from school and stealing.

PROCEDURES

Anxiety was measured by the Children's Form of the Manifest Anxiety Scale (CMAS). This questionnaire was developed by Castaneda (6) and his associates at the Iowa Child Welfare Research Station and was an adaptation of the Taylor Scale of Manifest Anxiety (10, 23, 24). The CMAS scale has been previously employed by several investigators (16, 25) as a measure of manifest anxiety. The questionnaire consists of 41 anxiety items and 11 lying items (L-Scale) which were designed to tap the Ss' tendency to falsify responses. Subjects responded to each item by checking either *Yes* or *No*.

The reliability coefficient of the CMAS test was determined by correlating odd CMAS items with even items.

The reliability coefficient, corrected by the Spearman-Brown formula, was .86 ($p < .01$) which indicates that the performance of Ss was statistically reliable.

The Blacky Pictures were used to determine the Ss' specific psychosexual problems. Considerable use has been made of this test by various investigators (1, 14, 17, 18, 19, 20). This instrument was developed by Blum (2, 3, 4) and consists of eleven cartoons depicting a dog, Blacky, going through various sexual-amative experiences with other dogs representing Blacky's father, mother and sibling. The test was based on specific Freudian hypotheses concerning an individual's psychosexual development. The test was scored using Blum's revised standard scoring system (3). To determine reliability of scoring, three psychologists were asked to score 10 Blacky protocols independently. There were only 4 disagreements about overall dimension scores among the three judges, out of a possible 130, which indicates that the scoring system em-

ployed was highly reliable.

RESULTS

The standard scoring procedure of the Blacky Pictures includes an overall dimension score for each psychosexual area which is scored either ++ (very strong), + (fairly strong) or 0 (weak or absent). The overall dimension score is derived by combining responses to the spontaneous story, the inquiry items, related comments on other cards and cartoon preferences. Due to the small number of Ss employed in this exploration, the very strong and the fairly strong overall dimension scores were combined.

Table I shows the overall dimension scores for the three ethnic groups. There were no significant differences between ethnic groups for any of the 13 psychosexual areas.

Table I reveals that 52 Ss and 47 Ss gave evidence of conflict in areas of masturbation guilt and anaclitic love object, respectively. Conversely, only 10 Ss and 14 Ss gave evidence of

TABLE I—Overall Dimension Scores for White, Negro and Puerto Rican Subjects

Psychosexual Dimension	Weak or Absent			Very or Fairly Strong			Chi-Square*
	Wh.	Neg.	P.R.	Wh.	Neg.	P.R.	
1. Oral Eroticism.....	17	11	10	3	8	8	5.48
2. Oral Sadism.....	11	6	8	9	13	10	1.66
3E. Anal Expulsiveness.....	10	9	5	10	10	13	3.06
3R. Anal Retentiveness.....	8	13	12	12	6	6	4.10
4. Oedipal Intensity.....	13	11	12	7	8	6	.45
5. Masturbation Guilt.....	2	3	0	18	16	18	1.62
6. Castration Anxiety.....	13	10	12	7	9	6	1.33
7. Positive Identification.....	19	15	13	1	4	5	4.79
8. Sibling Rivalry.....	16	14	13	4	5	5	.58
9. Guilt Feelings.....	10	9	14	10	10	4	5.69
10. Ego Ideal.....	7	11	6	13	8	12	3.04
11N. Narcissistic Love Object.....	15	10	11	5	9	7	1.78
11A. Anaclitic Love Object.....	4	3	3	16	16	15	.00

* Chi-Squares of 5.991 and 9.210 were significant at the .05 and .01 levels of probability, respectively.

TABLE II—Analysis of Mean CMAS Test Difference for All Subjects According to Presence or Absence of Each Area of Conflict

Psychosexual Dimension	O.D.S.	CMAS Scores			
		N	\bar{X}	S	t
1. Oral Eroticism	Weak or absent.....	38	22.26	6.99	
	Very or fairly strong.....	19	25.11	7.11	2.61*
2. Oral Sadism	Weak or absent.....	25	24.84	6.54	
	Very or fairly strong.....	32	22.03	7.29	3.05*
3E. Anal Expulsiveness	Weak or absent.....	24	22.87	7.38	
	Very or fairly strong.....	33	23.45	6.90	.63
3R. Anal Retentiveness	Weak or absent.....	33	23.18	7.89	
	Very or fairly strong.....	24	23.25	6.03	.07
4. Oedipal Intensity	Weak or absent.....	36	22.66	7.02	
	Very or fairly strong.....	21	24.28	7.53	1.57
5. Masturbation Guilt	Weak or absent.....	5	25.80	4.50	
	Very or fairly strong.....	52	22.96	7.32	.54
6. Castration Anxiety	Weak or absent.....	35	23.66	7.14	
	Very or fairly strong.....	22	22.50	7.14	1.14
7. Positive Identification	Weak or absent.....	47	23.36	7.50	
	Very or fairly strong.....	10	22.50	5.34	.41
8. Sibling Rivalry	Weak or absent.....	43	23.09	7.08	
	Very or fairly strong.....	14	23.57	8.25	.29
9. Guilt Feelings	Weak or absent.....	33	22.91	6.25	
	Very or fairly strong.....	24	23.63	7.62	.78
10. Ego Ideal	Weak or absent.....	24	20.75	6.48	
	Very or fairly strong.....	33	25.00	7.11	4.67*
11N. Narcissistic Love Object	Weak or absent.....	36	22.17	6.75	
	Very or fairly strong.....	21	25.00	7.50	2.82*
11A. Anacletic Love	Weak or absent.....	10	21.60	7.08	
	Very or fairly strong.....	47	23.55	7.14	.92

* "t's" of 2.00 and 2.66 were significant at the .05 and .01 levels of probability, respectively.

TABLE III—A Matrix of Intercorrelations between Manifest Anxiety, Lying Scores, Freedom from Psychosexual Conflict, Intelligence and Age

Number Variables	Intercorrelations				
	1	2	3	4	5
1. Manifest Anxiety.....		-.02	-.14	-.14	-.16
2. Lying Scores.....			-.19	-.29*	-.11
3. Freedom from Psychosexual Conflict.....				.12	-.27*
4. Intelligence.....					-.13
5. Age.....					

* R's of .26 and .34 were significant at the .05 and .01 levels of probability respectively.

conflict in areas of positive identification and sibling rivalry, respectively.

The range of anxiety scores was from 9 to 37 with a mean and sigma of 23.14 and 7.32. The range of L-scores was from 2 to 10 with a mean and sigma of 5.5 and 1.91. The correlation between anxiety scores and L-scores was $-.02$ which was not different from a zero order correlation. This latter correlation was a desirable relationship because it indicates that those Ss who falsified responses

may score high as well as low on the CMAS Test.

In Table II all Ss have been categorized according to overall dimension scores on the Blacky Test. Within each category are the number of Ss and the Ss' mean and sigma scores for the CMAS Test. The data of Table II indicate four significant differences in anxiety. Ss who gave evidence of problems in the areas of oral eroticism, ego ideal, and narcissistic love object scored significantly higher in

anxiety than did Ss not giving evidence of these conflicts. In the area of oral sadism, Ss who gave no evidence of problems scored significantly higher in anxiety than Ss who gave evidence of problems. There were no significant differences in anxiety between Ss who gave evidence and those giving no evidence of problems in the nine remaining areas.

Table III shows the intercorrelations between anxiety, L-scores, intelligence, age and freedom from psychosexual conflicts. Freedom from psychosexual conflicts was estimated by counting the zeroes for the 13 psychosexual dimensions. The correlation matrix shows that anxiety was not significantly related to L-scores, freedom from conflict, intelligence nor age. Freedom from conflict, however, was significantly related to age: the older the boy, the greater the conflict. Freedom from conflict was unrelated to L-scores, intelligence and age. Lying scores were significantly related to intelligence; the more intelligent the boy, the less the lying score. Lying scores were not significantly related to age.

DISCUSSION

The main purpose of this study was to explore the general relationship between manifest anxiety and the specific areas of psychosexual conflict which were measured by the Blacky Pictures Test. This problem area has not been explored previously so that the writers had only one rationally-derived hypothesis to guide the study. This hypothesis, which was based upon psychoanalytic theory, predicted a positive relationship between manifest anxiety and specific areas of psychosexual conflict.

The main finding of this study showed *no* significant relationship between freedom from psychosexual conflicts and manifest anxiety. Only three specific areas of conflict were significantly related to manifest anxiety. Why were there no significant relationships between manifest anxiety

and such theoretically related problems as guilt feelings, sibling rivalry, castration anxiety, etc.? While the answer to this question lies beyond the scope of this study, an explanation for the findings reported herein may lie in: 1) chance factors related to the distribution of the number of tests of significance used; 2) peculiarities within the delinquent sample; 3) the unreliability of the instruments; or, 4) other artifactual considerations.

While the results of this exploration probably do not possess demonstrable stability, they may serve as a source of hypotheses for further research. The following hypotheses might be proposed: 1) There may be no positive relationship between the expression of anxiety and the number of areas of psychosexual conflict; 2) the expression of anxiety may be related to specific areas of stress; and, 3) there may be a triad relationship among delinquent boys between manifest anxiety, oral eroticism and oral sadism: the greater the oral dependency and the less the conflict over the expression of anxiety, the greater the manifest anxiety.

The findings of this exploration and the discussion above should be interpreted in terms of the kinds and numbers of Ss used and the limitations of the instruments employed. Whether these findings may be generalized to dissimilar populations is a matter for future research.

SUMMARY

The purpose of this exploration was to investigate the relationship between manifest anxiety and specific areas of psychosexual conflict. Manifest anxiety was operationally defined in terms of Ss' scores on the Children's form of the Manifest Anxiety Scale. Specific areas of psychosexual conflicts were limited to Ss' performance on the 13 areas of the Blacky Pictures Test.

The Ss of the study were 57 white, Negro, and Puerto Rican boys at the

New York State Training School for Boys, a residential institution for adjudicated delinquents at Warwick, New York. The reliability correlation of these Ss on the CMAS Test was .86 which indicated that the performance of Ss was statistically reliable.

The major findings of this exploration may be enumerated as follows:

1. There were no significant differences in psychosexual problems between white, Negro and Puerto Rican Ss for any of the 13 areas studied.

2. The two most frequent areas of psychosexual problems for all the Ss were masturbation guilt and anacletic love objects. Problems in the areas of positive identification and sibling rivalry were the most infrequent for this group.

3. Ss who scored fairly strong or very strong for the areas of oral eroticism, ego ideal and narcissistic love object were significantly more anxious than those Ss who scored weak or absent for these three dimensions.

4. In the area of oral sadism, Ss who were categorized as weak or absent were significantly more anxious than those Ss who were categorized as fairly strong or very strong for this dimension.

5. There were no significant differences in anxiety for those Ss categorized as strong or fairly strong and those Ss who were categorized as weak or absent from the following dimensions: anal expulsiveness, anal retentiveness, oedipal intensity, masturbation guilt, castration anxiety, positive identification, sibling rivalry, guilt feelings and narcissistic love object.

6. Freedom from psychosexual conflicts, which was defined in terms of a quantitative summation of those areas of absence of stress, was not significantly related to manifest anxiety.

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Received March 18, 1957

BOOK REVIEW

Leary, Timothy. *Interpersonal Diagnosis of Personality.* New York. The Ronald Press Company 1957. \$12.00.

This 518-page volume, according to the author, is concerned with interpersonal behavior primarily as it is expressed and observed in the psychotherapeutic setting. Its value "lies in its emphasis on the complexity and variety of human nature and upon the objectivity and clarity of the empirical procedures it sets forth for multi-level diagnosis". As a whole this appears to be one of the most original and stimulating documents in the area of personality theory and assessment that has appeared in some time. It focuses on what seems to this reviewer to be the central problem in clinical assessment today, that of multi-level assessment. Much of the literature on projective methods and their validity is confusing and ambiguous because the possibility that assessment may be taking place at disparate levels has been largely ignored. Thus, projective techniques which measure mainly personality areas that are below the limen of consciousness but that have no direct behavioral referents have been found to be lacking in "validity" due to their low correlation with directly observed behavior.

Leary begins by frankly stating that his emphasis will be on the interpersonal aspects of personality. He documents the importance and significance of this aspect and adequately relates his views to currently existing theories in the field. The first major section of the book deals with the definition of the various levels and with suggested ways of measuring them. His discussion of the level of public communication (level I) is excellent and focuses on an area frequently ignored by clinical psychologists as well as psychiatrists. Many times in our usual methods of assessment we tend to assume that the private communications of the individual as seen through projective instruments, together with the conscious self-concept derived from interviews, make for a realistic and adequate picture of personality functioning. It has not been sufficiently considered that an individual may play many roles in his life and his functioning efficiency in various interpersonal situations may differ greatly from both his description of himself and his private motives, as gauged by depth procedures. The concept of "interpersonal

reflex" suggested by the author seems an excellent description of the tendency that many individuals have to behave in stereotyped ways towards others and almost to force their fellow man into taking an attitude towards them based on their own conflicting needs and projections. The author's discussion of the level of conscious communication (level II) is also quite good, providing many stimulating ideas for the clinical worker. Leary emphasizes the bias implied in focusing upon hostility and aggression as signs of pathology which seems to be part of our clinical culture. He points out that "overconventionality" and "hypernormality" can also be forms of maladaptive behavior and suggests terms and concepts describing this type of interpersonal technique. When the author comes to the level of private perception (level III) he shows less strength and less sophistication. The term "preconscious" which he assigns to this level seems rather unfortunate, even though it is always stated in quotations. "Preconsciousness" has theoretical connotations which seem quite inappropriate here and tend to confuse the issue throughout the ensuing parts of the book. His assumption that the Rorschach test is useless in measuring this level and that content analysis of this test has been the "stepchild of Rorschach-type theory" seems rather gratuitous.

The other levels that the author discusses are taken up in less detail and seem to be of less significance in the interpersonal system conceived of at present. The level of the unexpressed (level IV) is discussed in a rather muddled theoretical way, and the assumption that this is a level of greater depth than the preceding level is not documented very effectively. The level of values (level V) seems to dangle in this system without any particularly convincing reason being offered for its inclusion. This section of the book concludes with a general discussion of interpersonal diagnosis which is essentially sound although somewhat defensive in tone. Why the author should be so delighted at the prospect of turning over the bulk of his work to clerks and technicians is rather difficult to understand, unless he has deluded himself into really believing that his techniques are fully adequate as a basis for making the important decisions about the lives of patients that have to be made in a psychiatric setting. His dogmatism here is

unfortunate since it detracts from the real contribution the system has to make to the total understanding of individuals, both sick and well. The suggested relationships between interpersonal diagnosis and Kraepelinian nosology are interesting but seem at this point to be mainly *a priori* and are not documented by any statistical evidence.

The next section of the book deals with what the author refers to as "the variability dimension of personality". Good operational definitions of the usual defense mechanisms are supplied in this section and are related to interpersonal indices in a plausible manner. The fact that such definitions constitute merely logical constructs of an *a priori* nature is not sufficiently emphasized, possibly leading to the false impression that they are the results of research. The clinical chapters following are entertaining and interesting, providing much demonstrative case material of value to the clinician. They seem rather less original than the preceding sections and provide little that is new and startling. Some of the correlations cited are less than impressive, since level I phenomena are often based on test categories and then in turn related to them, giving the impression of pulling oneself up by one's own bootstraps; also the overlapping and uniqueness of signs tends to be glossed over. It is rather difficult to understand where the author gets such assumptions that the MMPI F scale measures "nonconformity" or that the Ma scale measures "imperturbability".

The diagnostic sections give an impression of overemphasis on symptoms which fails to do justice to Leary's intent and may be misleading to the reader. There is some doubt in the reviewer's mind as to the value of including this material in the book. Among the more original points made in this section are (a) the emphasis on the solicitation of interpersonal behavior from others which characterizes different personality types, and (b) the influence of identifications made by people throughout their life on the development of interpersonal techniques. Leary's discussion was saved from stereotypy by the inclusion of concepts of this kind which seem highly plausible and refreshingly novel.

The last section of the book deals with some illustrative applications of the interpersonal system. It is pointed out that hos-

pital patients show more interlevel disparity. The author fails to discuss how the use of his system is essentially different from the usual "team" approach in which the social worker may make contributions at the level of public communication, the psychiatrist at the level of conscious communication, and the clinical psychologist at the level of private perception. However, the Leary frame of reference could easily be applied to the above and would make the whole staff system of diagnosis much more theoretically comprehensible. The discussion of psychosomatic types emphasizes that different types of psychosomatically ill individuals may present the same facade but have different underlying multi-level patterns. This appears to be a real contribution to knowledge and gives some objective evidence for much clinical folklore.

The discussion of the applications of the system to industrial management also seems very helpful for diagnostic purposes. The question is left open as to how this knowledge might be used for counseling or remedial purposes. Finally, some tantalizing bits and pieces of information are given as to the application of the system to the area of group psychotherapy. It is unfortunate that no more space is devoted to the discussion of this subject since it seems to be one of the most obvious and useful ways of applying the theory and assessment procedure.

The reviewer enjoyed reading this book very much. It brings together much of the thinking and theorizing on the part of Leary and his colleagues that has been found in various articles scattered throughout the literature in the past six years. It is suggested that every clinical psychologist regardless of his level of sophistication, will find his thinking stimulated and his assessment program broadened by perusal of this volume. An incorporation of these theories might well make our research in the validation of projective techniques much more relevant and germane, permitting the definitive exploration as to what is and what is not to remain with us as a tool during the years to come.

WALTER G. KLOPPER, PH.D.
Chief Clinical Psychologist
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Norfolk, Nebraska

GENERAL NEWSLETTER

de Zeeuw, J. The administration and interpretation of the Rorschach test in three phases. *Zeitschr. f. diagn. Psychol.*, 1957, 5, 5-19.

An extension of the administrative procedure is suggested for the purpose of enriching the diagnostic process with the Rorschach.

Janssen, Ingeborg. Beurteilung der Zeugentüchtigkeit eines 13 jährigen Mädchens. *Zeitschr. f. diagn. Psychol.*, 1957, 5, 20-30.

The psychological examination of an adolescent sexual accuser suggests the falsity of her accusation and stimulates an admission.

Sazi, Morio and Kataguchi, Yasufumi. A study on the measurement of the effects of psychotherapy. *J. ment. Health*, 1956, 1-52. (Tokyo)

Ratings, therapeutic session content, and

Rorschach protocols were employed in the evaluation of the nature and amount of psychotherapeutic change.

Kataguchi, Yasufumi and Dendo, Hisako. A study on the personality of the traumatic neurosis by Rorschach test. *J. ment. Health*, 1955, 30-41. (Tokyo)

Patients diagnosed as traumatic neurotics with hysterical symptoms revealed Rorschach pictures of rigid personalities rather than the conventional hysterical pictures.

Delay, Jean; Pichot, P.; Lempriere, T.; and Perse, J. Le test de Rorschach dans le psychosyndromie organique. *Rev. de Psychol. Appliquée*, 1956, 6, 247-287.

A summary of the research findings of various investigators of brain syndromes by means of the Rorschach. The authors find the Piotrowski signs to be more valid than the others.

ANNOUNCEMENTS

EIGHTEENTH ANNUAL MEETING SOCIETY FOR PROJECTIVE TECHNIQUES

New York 1957

PROGRAM

Thursday, August 29, 1957, 10:00 a.m.

Semi-annual meeting of the Board of Trustees, 27 W. 86th St.

Saturday, August 31, 1957

Symposia on Evaluation of the Process and Results of Therapies.

- I. General Problems of Methods and Theory: Hans Strupp, Ph.D., Chairman. (*Penn Top South, Hotel Statler*)
 - a. Leopold Bellak, M.D.: "Studying the Psychoanalytic Process".
 - b. Helen Sargent, Ph.D.: "Studying the Outcome of Therapy".
 - c. Morris Parloff, Ph.D.: "Studying the Communication of Values and Therapeutic Change".
 - d. Herman Molish, Ph.D.: "Studying the Effects of Ataractic Drugs".
- II. Results with Psychotherapies: Robert R. Holt, Ph.D., Chairman. (*Penn Top South, Hotel Statler.*)
 - a. Gerald Ehrenreich, Ph.D.: "Assessing Therapeutic Results with Psychological Tests."
 - b. Eli Rubinstein, Ph.D.: "Assessing the Results of Out-Patient Psychotherapy".
 - c. Roy Schafer, Ph.D.: "Problems of Interpretation in Re-testing."
- III. Results with Ataractic Drugs: (*Penn Top South, Hotel Statler*).
 - a. Report of the Diagnostic Devices Committee (Division 12). Herman B. Molish, Ph.D., Joseph McGovern, Ph.D., Newell Berry, Ph.D., Benjamin Pope, Ph.D., Kenneth B. Little, Ph.D.: "A critical Review of some Research Studies concerned with the Effects of Ataractic Drugs."
 - b. Samuel W. Greenhouse: "Some Methodological Aspects of the Evaluation of the Effects of Ataractic Drugs. A Review of some Controlled Studies."
 - c. Herbert J. Schlesinger, Ph.D.: "The Use of Projective Techniques as Applied to the Evaluation of the Effects of the Ataractic Drugs."
 - d. Albert Kurland, M.D.: "Evaluation of the Ataractic Drugs in the Psychiatric Treatment of State Hospital Patients. Some Results and Special Problems concerning Meth-

odology."

- e. A. D. Annis, L. Mitchell, M. Zax, Ph.D.: "The Conditioned Galvanic Reflex as a Method of Evaluating the Effects of Ataractic Drugs in a Group of Psychiatric Patients."

BUSINESS MEETING, Society for Projective Techniques, *West Room, Hotel Statler*, Saturday, August 31, 1957, 4 to 4:50 p.m.

Agenda for the Annual Business Meeting

1. Officers' Reports
 - a. Secretary Helen Davidson
 - b. Treasurer Gordon Derner
 - c. Executive Editor..... Bertram Forer
2. Committee Reports
 - a. Ethics Margaret Mercer
 - b. Finance Harry McNeill
 - c. International Grace Cox
 - d. Membership Walter Klopfer
 - e. Nominating Jules Holzberg
 - f. Program..... Roy Schafer, Leopold Bellak
 - g. Regional Herbert Dorken
 - h. Research Herman Feifel
 - i. Training Walter Kass
3. New Business
4. Introduction of Newly Elected Officers

ANNUAL DINNER MEETING: Society for Projective Techniques, *Penn Top North, Hotel Statler*. Price \$5.75 plus 15%, plus 3%. 6:00 p.m.

PRESIDENTIAL ADDRESS: Bruno Klopfer: "Psychological Variables in Human Cancer". About 7:45. Non-diners are also invited.

Sunday, September 1, 1957

11 a.m. to 12:50 p.m. *East Room, Hotel Statler.*

Joint Symposium with Division 12. "Research with Projective Techniques". Herman Feifel, Ph.D. Chairman.

Speakers: Leonard S. Abramson, Ph.D.; Ralph H. Gundlach, Ph.D., Edith Wiesskopf-Joelson, Ph.D., Henry David, Ph.D.

Discussant: Bertram R. Forer, Ph.D.

Monday, September 2, 1957

Meeting of the newly-elected Board of Trustees at the home of Dr. Leopold Bellak, the new President, Larchmont, N. Y., 2 p.m.

For specific times and places and in the event of subsequent changes in plans, please consult your official A.P.A. program at the meetings.

REPORT BY THE INCOMING PRESIDENT

The Executive Editor is anxious to get this copy of the Journal to you before the meetings, so that you can peruse the program printed in this copy. Therefore, I am taking this early opportunity to report to you since

I particularly hope that you will attend the business meeting. This time, it will be combined with an open meeting of the Board of Trustees in order that you may have more direct contact with current work than usual. In addition, your full attendance at this meeting will be a fitting tribute to Dr. Bruno Klopfer. When he turns the presidency over to me formally, he will not only have completed service in that capacity but served as Editor of the Journal for twenty years. In these, and in other capacities he has been of outstanding value to the Society and to projective methods. He deserves our thanks.

It is my intention to inaugurate a permanent presidential page with this report since I feel that a greater contact between the membership and the officers of the Society will be useful to the development of our field. Our secretary, Dr. Helen Davidson, has familiarized you with the events of the past year; therefore, let me take this occasion to give you a preview of the plans I hope to submit to the Board.

If we define our Society's purpose as the extension of the optimal usefulness of projective techniques in the general context of psychology and allied behavioral sciences, then I believe that the following should be done immediately:

(1) *Research activities should be increased and integrated.* This can be done by establishing a "Research Registry" as part of and a function of the Research Committee. It would be a central fact-gathering, fact-reporting and fact integrating agency.

Projective records would be micro-carded; and this would be one step toward establishing normative frames of reference and facilitating comparisons and exchange of data. Without going into too great a detail: Dr. Klopfer and the Board have authorized Dr. Feifel (chairman of the Research Committee) and myself to engage in some preliminary planning with Dr. Bertram Kaplan, Secretary of the Committee on Primary Records, National Research Council, for the micro-carding of projective records.

In addition, I am trying to obtain support from other Foundations to make it possible for the Board to stimulate needed research and to serve in an advisory capacity to thesis supervisors and research workers.

(2) *The Training Committee* is the watchdog for the teaching of projective techniques. It is my belief that only Fellows of the Society should teach these techniques—the Society thus safeguarding the standards of proficiency. It is my aim to establish close

contact between our Training Committee and the APA Committee on Certification of teaching programs.

The Training Committee, under the chairmanship of Dr. W. Kass, has made a preliminary survey* of the teaching of projective techniques. Dr. T. Abel, in a private conversation, impressed me with the fact that projective techniques are probably taught too early in the clinical program and not properly integrated with the rest of the clinical experience. Dr. M. Hertz has expressed an interest in the improvement of report writing; and I firmly believe that some standards must be developed.

(4) *The Program Committee* has, this past year, put special emphasis on projective techniques as an interdisciplinary tool; and it has appeared on various conference platforms under this aegis. Efforts will be made to have again programs jointly sponsored by our Society and the American Psychiatric Association, the American Psychological Association and the Orthopsychiatric Association. The Board has already approved an ad-hoc liaison committee with other professional societies to assist them in programming work on projective techniques and the optimal use of projective techniques in the respective fields.

(5) *Finances.* It is my firm belief that the Society should make some earnest attempt to solicit grants and, particularly, bequests. The Society should have some capital, the earnings of which could be used to further the activities of projective techniques. Therefore, all members are asked to keep the Society in mind whenever they detect philanthropic urges in themselves or in others!

Above All: The creative thinking of the membership is needed. The job ahead is simple: We must improve the functioning of our Society and advance the use of projective techniques. This can only be done by full membership participation. Therefore, all suggestions will be greatly appreciated.

LEOPOLD BELLAK, M.D.

COUNCIL OF PSYCHOANALYTIC PSYCHOTHERAPY

The Council of Psychoanalytic Psychotherapy will hold its first general meeting at 1:30 p.m., October 26, 1957 at the Carnegie Endowment for International Peace, United Nations Plaza, New York City. The Council is composed of practising psychoanalysts of varied theoretical orientations. Members of this group are drawn from the fields of medicine, social work and psychology. Persons interested in joining the Council of

Psychoanalytic Psychotherapy are invited to attend the meeting. Any inquiries regarding membership should be addressed to Dr. IVAN WENTWORTH-ROHR, 270 West End Ave., N.Y. 23.

REGIONAL REPORT

The New York chapter of the Society for Projective Techniques held its annual meeting and all-day conference on the subject: "Rorschach and Freud," on Saturday, May 11, 1957, at New York University. Emanuel K. Schwartz was chairman. The address was presented by Zygmunt A. Piotrowski and subsequent small group discussions were led by Fred Brown, Susan Deri, Asya L. Kadis, and Samuel B. Kutash.

More than 100 people attended, and the technique of small-group seminar-discussion proved to be an exceedingly worthwhile arrangement for meetings.

The group leaders found the audience very inspired and they contributed to practical and clinical evaluation of the presentation.

Dr. Piotrowski's main idea was that the concepts and methods of Freud and Rorschach complement each other. The Rorschach is a tool without a personality theory: psychoanalysis contains a personality theory. The Rorschach, therefore, should be handled in Rorschach terms and then interpreted in psychoanalytic terms, if necessary. The analysis and description of personality can only benefit by uniting these two approaches. There are many Rorschach conclusions which have nothing to do with Freud, and are consequently, largely independent of anything said by Freud, and independent of the degree of validity of the specific Freudian statement. The combining of the methods and ideas of the two men should be done in such a way that the contributions of each stands out clearly.

Dr. Piotrowski's report of the personal life history of Rorschach made him come alive as a clinician and scientist, and as a person.

Dr. Piotrowski discussed also anxiety and emotional, personality levels, the relationship between color, form, movement, and original responses. He gave also clinical instances.

For the year 1957-58, Samuel B. Kutash was elected President of the New York Chapter, Mrs. Janet Ginandes, Secretary, and as members of the Executive Committee Theodora M. Abel and Emanuel K. Schwartz immediate past President.

RESEARCH EXCHANGE

This new column was started for the purpose of publishing speculative research ideas,

of listing rare projective records which the owner is willing to lend to other psychologists, and of printing want-ads for such records. (see this journal, 1957, 21, 103).

Bert Kaplan, from the University of Kansas, has sent us the following contribution.

Volume I of *Primary Records in Culture and Personality*, a publication on Microcards of personality materials in nonliterate and non-Western societies was published early this spring. The series is under the sponsorship of the Committee on Primary Records, National Academy of Sciences-National Research Council and is edited by Bert Kaplan, University of Kansas. Volume I which contains almost 4,000 pages of data consists of 131 Microcards of the standard 3 x 5 inch size and sells for \$35.00. Volume II containing 7,600 pages will be available shortly. The series may be ordered from The Microcard Foundation, Box 2145, Madison, Wisconsin.

The first two volumes include projective test, life history and dream data collected by such workers as Victor Barnouw, Lucien M. Hanks, Jr., John Honigsmann, G. Morris Carstairs, Erika Bourguignon, William Caudill, Alen Kerckhoff, Blanche Watrous, Anthony F. C. Wallace, Robert Anderson, Elizabeth Colson, Bert Kaplan, Kurt Wolff, Paul Wright, Evon Z. Vogt, Jr., Paul Hauck, John Adair, Jules Henry, Thomas W. Maretzki, Murray A. Straus, Mohamed I. Kazem, A. Irving Hallowell, Ernestine Friedl, Edward Bruner, Louise Spindler, George Spindler, Weston La Barre, Dorothy Eggan, David Horr, Alfred Johnson, Dorothea C. Leighton, William R. Holland, Fred Eggan, Hildred Geertz, Sally Lewis, Alice Joseph, Veronica Murray, Francis B. Mahoney, William A. Lessa, Melford S. Spiro and Madeline Kerr. The cultures represented in the first two volumes are Nepal, Thailand, Pakistan, Hindu and Moslem of Udaipur, India, Bhil's of India, Great Whale River Eskimo, Cree, Ojibwa, Tuscarora, Cheyenne, Pomo, Spanish-American, Hopi, Navaho, Ute, Zuni, Pilaga, Haiti, Jamaican-Chinese, Ceylon, Egypt, Mandan-Hidatsa, Menomoni, Kiowa, Mexico, Java, New Ireland, Saipan, Palau, Ulithi, Ifaluk and Jamaica.

These data will be available in more than 60 college and university libraries and constitute a rich resource for the study of cultural differences in responses to projective tests. They not only are applicable to problems of national and cultural differences in personality but are also relevant to the problem of understanding the nature of cultural factors in projective test performances.

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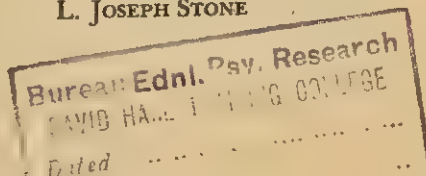
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Psychological Variables In Human Cancer

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During the eight years from 1939 to 1947, when I served as Director of the Rorschach Institute before it blossomed into the Society for Projective Techniques, I faced many difficult tasks, as Dr. Bellak so friendly hinted, but never before one as difficult as this, presenting a presidential address. This task is especially formidable in terms of tradition; if you think back to the first years of our organization, for instance, the very first presidential address was Morris Krugman's "Out of the Inkwell"; the second was Marguerite Hertz's "Twenty Years After," shortly after that Marie Rickers presented her address called "Some Theoretical Considerations Regarding the Rorschach Method." These papers are even now classics among the 3,000 publications on the Rorschach method which have accumulated since then.

As Dr. Bellak pointed out, five authors of such presentations are here in the room and make me feel very anxious as to how my presentation will compare with theirs.

It is quite natural to expect from presidential addresses more than just an interesting talk; more than just some interesting material. All these presentations were characterized by a gleam in the eye of the speaker who told of wide horizons, of wise overviews of a large sector of the field.

Following my non-conformist tradition I felt, oddly enough for my usual point of view, that I would rather start this presidential address from a specific piece of research.

Those of the present former presidents who have presented some research material, like, for instance, Theodora Abel with her Chinese rec-

ords used it as a point of departure for a larger theoretical consideration. I hope the selection I have made will also serve as a departure into wider horizons. But I will leave it to you to judge the significance of what I have to say.

The beginning of this project goes back about seven or eight years. A couple of physicians at the Veterans Administration Hospital in Long Beach, California—the head of the cancer department and a biophysicist who worked very closely with him—got interested in some extensive research work with cancer patients in what we nowadays might call the symbiosis between the cancer patient and his cancer. They left aside all the difficult problems connected with the genetic aspects of cancer, and concentrated on one very well circumscribed problem, namely, the mysteries of the growth rate, the rapidity or slowness of the growth of cancer. This has been observed as a problem for many, many years and there are indications that there is something peculiar about it.

This problem has even what you might call a sentimental angle. Very often physicians have observed that the cancer seems to be particularly successful in some of the patients whom they appreciate most as human beings.

There may always be a little retroactive halo effect that you feel a person was worthwhile when he dies, according to the Latin principle "*de mortuis nil nisi bonum*"—not to say anything bad about the dead—but still there is quite some evidence that this is not only a sentimental illusion.

There are indications, for instance, that in mental hospitals cancer has a much harder time than outside. Not only is cancer proportionately slower

¹ Presidential address delivered at annual meeting of Society for Projective Techniques, August 31, 1957, New York, N. Y.

growing among schizophrenics, but the schizophrenics seem to live much more comfortably with their cancer than other people do. I don't know whether there are exact statistical data, but this is a general observation that seems pretty well established.

In order to investigate this problem scientifically, the first thing to do was to objectify the concept of the rate of cancer growth. How can you say, or where do you draw the line in order to say that a cancer is fast or slow in growth?

Now, these two physicians, Dr. Frank Ellis and Dr. Philip West, used a fairly simple way of approaching this knotty problem. They got hold of all available U. S. statistics about the life duration of cancer patients. It is well-known that this depends first on the kind of cancer from which a person suffers. For instance, acute leukemia, which takes mostly children as its victims, is probably of all cancers the most rapid type, while on the other hand cancer of the breast is not only least terrifying because it is most susceptible to surgical removal, but, even besides that, seems to be one of the slowest-growing cancers.

So, first of all, if you want to decide whether a cancer grows slow or fast, you have to decide it for each type of cancer growth separately.

It seems, if you take these U. S. statistics as a basis, that there is a certain distribution of longevity or survival time for each type of cancer. You determine for each cancer how many people are still alive who suffer from this cancer from the time when it was discovered (which is uncertain in many cases), in one year, in two years, in three years, in four years, in five years, and so on. What they did is simply to take a crude measure for separating slow and fast cancer growth by determining for each kind of cancer the time period in which only 25 percent of the patients with this particular kind of cancer had died. Then they determined the second point—when 75

percent of all patients with this particular cancer had died and only 25 percent were still alive. They decided to sacrifice, in an effort to objectify the concept of fast and slow kinds of growth, 50 percent of all possible cases and exclude from their research all cases whose time of death fell between the 25th percentile and the 75th percentile of duration of survival.

They decided that anybody who dies earlier than the first 25 percent of the patients with a specific cancer had unquestionably a fast cancer growth; and anybody who is still alive after 75 percent of all patients with the same type of cancer have died showed slow cancer growth.

This takes care, also, of one other factor which may or may not have a strong influence on the cancer personality picture, and that is the age of the patient. There are certain types of cancer with a very specific age distribution, for instance, acute leukemia. Thus you compare each patient with his own age group. In those cases where the cancer seems to be rather without a specific age distribution, it seems likely that age doesn't seem to be decisive.

The next point was, how do we go about finding out whether this medical fact—that they had a fast or slow-growing cancer—could be related to personality.

The whole research project and a great deal of the original data are published in a book which has the same title as my talk, "Psychological Variables in Human Cancer," which was published in 1953 by the University of California Press.

My own contribution to that book consists of three pages in one place and one page in another. I am therefore not repeating what I have already published, because all that I published were a few preliminary remarks in a symposium we had in October of 1953, without having had an opportunity to work over the data on which these preliminary impressions were based.

I may say, just for the sake of exactness, that I did talk once before in February 1956 at the Northern California Chapter of the Society for Projective Techniques about this material, and it was a very interesting discussion where Dr. Harrison Gough reported about some very meaningful parallel results with other psychological tests in TB patients. But first I have to tell you how I got into the whole business myself.

In connection with this research two of our Ph.D. candidates wrote their dissertations. They used other techniques but also collected Rorschach records of these slow and fast cancer patients. Then a routine situation developed which I have come across quite a number of times. They had the Rorschachs on these cancer patients and they didn't know what to do with them.

Since I was coming at that time every week, later every two weeks, as a consultant to this particular hospital, they said, "Well, you come here anyway. You could do some work. Why don't you spend an hour and a half of each visit and have a look at these Rorschach records?"

The only approach I know to such a problem is a direct empirical one: "All right, let's get started. You pick me three records of patients who have fast-growing cancers and three records of patients with slow-growing cancers and I will look at them and see if I see any difference."

I looked at these six records in one of our first sessions and I got some ideas in what way they might be different from each other. In the second half of my presentation, I'll discuss what this way was, so I won't go into it at this moment.

We had used up six patients for this preliminary study and then I looked at the Rorschach records of twenty-four patients blindly. I knew they were cancer patients, to be sure. I knew, also, their sex and age. They were all men, except one, by the way. But that is all I knew. I also did not

know what kind of cancer they had. Interestingly enough, that wouldn't have made much difference to me because I didn't know enough about it when we started this research.

I can give you very simply the results of this experiment, if you want to call it that. I may say, by the way, that among these twenty-four cases, there were not only postdictive cases, there were also three or four newly-arrived cancer cases where none of the doctors could foretell whether they would be fast or slow. So there we made real predictions not postdictions.

Out of the twenty-four patients I postdicted or guessed correctly that nine of these twenty-four had a fast-growing cancer. I also guessed correctly that ten of these twenty-four had slow-growing cancer. I could not decide which it was in one case. And in each case I made two mistakes; two fast-growing cancers I called slow and two slow-growing cancers I called fast.

The statistics showed that this could not have been a pure chance result. (Chi-square is 6.042 corrected for continuity; $P < .02$)

Now, we had one other criterion to use, that of life or death itself. Five years ago all this work had gone on, just recently I got the idea, "Now let's see what happened to these patients in the meantime." You understand that whether they are still alive or not does not determine whether there was a fast or slow-growing cancer because if a patient has lived beyond the 75 percent of his quota, even if he dies, which we all eventually do, he still remains a slow-growing cancer patient. But if any of these patients are still alive we are sure that they were in the slow-growing group. As a matter of fact, in December 1956, of the ten whom I had predicted or postdicted correctly as having slow-growing cancers, four were still alive and none of the others were living.

I can give you some other figures about the experiment. The MMPI

was also used for such postdictions. In 44 cases, 21 were correctly identified as fast-growing cancer, 13 correctly identified as slow-growing; five of each group wrongly identified. It is a larger group of people, therefore the statistical significance is on a .001 level as far as MMPI is concerned. (Chi-square = 12.356)

In fifteen cases we had postdictions from the Rorschach and the MMPI. Eleven of these patients were correctly recognized by both the Rorschach and the MMPI; two were incorrectly recognized from the MMPI, correctly from the Rorschach; two correctly recognized from the MMPI and incorrectly from the Rorschach; and only one case of the 15 mis-diagnosed by both techniques.

These figures are supplemented by two later experiments, if you want to call them that. Last October at the M. D. Anderson Hospital in Texas a most interesting research conference was called of about forty psychologists and physicians from all over the United States, all of whom were actively engaged in cancer research from the psychological point of view. They asked me at the conference to perform the same experiment with two of the patients at the hospital there, this was a particularly ticklish experiment because they had then only melanoma patients in their research files and slow-growing cancers are very rare in this group. One of my faculty colleagues was present also at this experiment and I don't think he was so much impressed by what I did, but he was impressed by the reaction of the other thirty-eight people. He happened to be in charge of our research seminar so he asked me whether I would be willing to stick my neck out in front of 150 students and 50 faculty colleagues. So I said, "Chop it right off." They selected three cases again from the files of the Long Beach Hospital whom I had not seen before and I identified all three correctly. In these subsequent experiments I

therefore identified correctly four out of five.

You may assume no matter how I did it, whether I did it by ESP or anything else, that this might be an interesting result in itself. What could it mean? If anybody, no matter by what means, can, merely from a Rorschach record, say whether a person's relationship to his own cancer is such that the cancer grows fast or that the cancer grows slow, what possible inference can you draw from that?

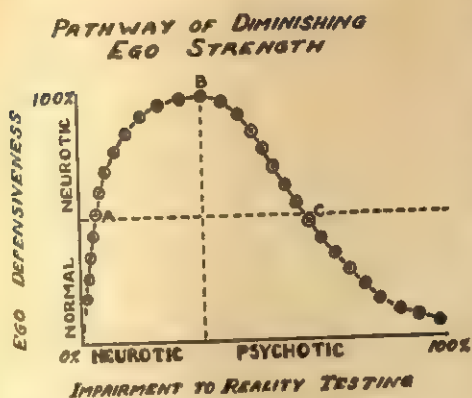
As far as I can see, there is only one possible inference, if we in the light of the statistical significance agree that this is not just a fiction but a real fact. However, in order to discuss that with you I have to explain to you first how I did it, or at least how I think I did it.

In order to perform this job I turned back to a conceptual scheme which had been slowly crystallizing in my mind for about two years preceding this experiment. This was the first time that I actually used this scheme as a research tool and I felt very much reassured by it.

I called this peculiar pseudo-statistical or quasi-statistical scheme, with my disrespect for nomenclature, "The Pathway of Diminishing Ego Strength." Assuming we had some kind of instrument with which we could accurately measure anybody's ego strength and we applied it to a random sample of a large population, let us say a million people—as long as we don't have to do it we can be generous—we could rank them from the person with the greatest ego strength all the way down to the person with the least ego strength. Then we take this long line of a million people and fit it into a scheme of two axes pictured on next page.

The vertical axis represents the amount of vital energy each of these people consumes in the defense of an insecure ego (level of ego defensiveness).

Quite arbitrarily, from the point



of view of this concept we grant generously to everybody that he can show 50 percent of the maximum amount of ego defensiveness and still have a normal adjustment.

People who use less than 50 percent of whatever vital energy can be invested in ego defensiveness are located from O to A and people who use more than half of the available amount of vital energy for ego defensiveness are above this point, "A."

At this point we have to make an important distinction between "adjustment" and "ego defensiveness." Below point "A" the two concepts are practically indistinguishable. Above point "A" we'll find many people who show an excellent outer adjustment—the very people who give rise to the sentimental aspect of our problem—but who pay too high a price in ego defensiveness for such achievements. Along with these well adjusted, but insecure people we find between point "A" and point "B" all kinds of overtly neurotic people.

The horizontal axis of the illustration represents loyalty to reality. How faithfully does a subject adhere to reality as it is, or how deficient is his reality testing? In this scheme we can describe the degree of impairment of reality testing from complete loyalty to reality to the point where there is no more real contact with reality.

Now, the zero point in reality testing and ego defensiveness in the scheme (where both axis cross) is an

utopian point. It would locate those people who can take reality absolutely unflinchingly, without any need to defend their ego, without ever getting afraid of it. There are no such people, you know that. But theoretically we can say this is "the ideal type."

You could line up from this ideal point all the people who don't overinvest in ego defensiveness, whom we call normal. They can afford to be quite loyal to reality. They don't have to distort reality. Then we come to the point in our long line of persons from the strongest to the weakest ego to people who do overinvest in ego defensiveness. The illustration shows that you can invest a good deal in ego defensiveness and still stay pretty close to reality.

At point "B" we come to the point of diminishing returns. If you approach the point where you have invested all the vital energy you can in ego defensiveness, something gives way. Usually I say it's like the principle of butter and cannons. If you over-invest your economic strength in armament then you run out of butter. It seems a point where the overinvestment in ego defensiveness makes it impossible to retain loyalty to reality. You get a pretty sharp break where loyalty to reality diminishes rapidly. Strange as it seems, at that point where the ego structure starts to crack, suddenly the amount of vital energy invested in ego defensiveness diminishes.

At point "C" we come then to the strange phenomenon of people who are really quite sick but on a superficial look at their Rorschach records you have the feeling, "Oh, they are not much more uncomfortable than a fairly normal person." From about this point on in the scheme there is no longer anything to defend; the ego becomes dissociated and no more systematic effort in defensiveness can be recognized.

This is nothing but a schematization of something which I think every-

body knows. There are limitations to the scheme that I want to point out. I don't think it fits more than 80 percent of possible subjects.

Let us take just one possible large exception. There are various kinds of people whom I always describe as having a "floating island" ego. They have shallow roots for their ego. Hypomaniac people, psychopathic people, and a number of other categories form this group. When they get under great stress, symbolically speaking their ego seems to pull up its roots and floats on the tide. They float away. And when the stress is over they settle down again and are the same as before. You don't have the feeling their ego becomes fragmented, as in the other cases. But most of the normals, neurotics, and psychotics, I would say about 80 of any hundred people, would fit somewhere into this scheme.

We have to make one more step. One of the reasons why I used these two particular components of ego functioning, the general level of ego defensiveness and reality testing, is probably that these two components are relatively clearly reflected in Rorschach records. The general level of subjectively-felt discomfort in dealing with the emotionally loaded stimuli of shading and color seems to be a good yardstick for the level of ego defensive investment.

The more a subject shows any of the myriad kinds of discomfort in handling, in using, or not using shading and color, the more subjective discomfort you see, the higher you have to rate him on ego defensiveness. And, if you investigate the form level, the qualitative aspects of the whole thought process, you can determine how far from the ideal point of loyalty to reality the subject is.

When I looked at these first six preliminary experimental subjects there was no question that every one of the people with the slow-growing cancer was, in his level of discomfort, below this line, A-C. And even though none

of them was clinically a psychotic, they had developed a relationship to reality which you can only describe with the simple phrase, "They didn't give a damn." Their whole attitude was, "Why should I care?" and they were very sloppy in their organization of their responses. They changed and shifted around in their responses. They didn't have the very bizarre kind of responses which you find in many schizophrenics but, in comparison with the kind of intelligence which the whole Rorschach showed, they were not making any effort to be loyal to reality. They were all to the right of point "B" and at the same time they remained below line A-C in terms of ego defensive investment.

And the three fast cancer patients were all in the quadrant A-B without any question. They were all people who tried very hard to be loyal to reality and paid a terrible price for it.

This is the first hint of what the sentimental aspect of the whole problem is about, why a "prince of a fellow" dies so fast from cancer. It may not indicate whether these people were "good people" or not. It may simply indicate what price these patients, for whom the doctor always feels extremely sorry, had to pay for being "good"; that they overinvested too much ego defensive energy in their attempt to be good and loyal.

I can only say that my errors were mostly in this area between point "B" and point "C." In other words, in our clinical nomenclature we would have to say these were all people, whose fragmented ego defenses placed them somewhere between psychosis and neurosis.

According to my conceptualization, you couldn't do better than chance in this quadrant B-C because you could never tell whether the beginning fragmentation of the ego defenses has reached a point where the ego has practically given up defending itself, and allowed the psychotic coping mechanisms prevail, or whether the "scar tissues," figuratively speaking, of

these fragmented ego defenses create the kind of discomfort which uses up vital energy even faster than a well-compensated, well-functioning character neurosis.

If we leave this out for a moment, it seems that the chances of guessing correctly, if you are sure that a person belongs in this quadrant A-B or that the person belongs below this line A-C, is extremely high.

Let me add that fortunately among our samples we have also two patients who belong in quadrant O-A, people who were amazingly well adjusted not just in a superficial behavioral sense, but amazingly relaxed, amazingly mature.

I know one of these people personally. She has had Hodgkin's Disease now for over twenty years and occasionally she gets sick again but responds very quickly to X-ray treatment. She is a very extreme case in this category.

I had a very interesting experience last night. I met here one of my colleagues and we talked about whether he wants to come here tonight and listen. Then he said, "You know that I am a cancer patient." I said I had no idea. I hadn't seen him in quite a few years. He developed a very severe intestinal cancer five years ago, which was unfortunately not recognized. He says the doctor, when he went to him and talked about his complaints first, said to him, "Oh, that's psychosomatic." He said, "I'm a psychologist myself. I know what it is, it feels different." He went on a trip and he almost didn't make it home because the cancer had developed to such an extent that he nearly died on the way. He was immediately operated when he came home and this is now five years ago and as far as he can tell there is no new metastatic development. And this is a man who I would say, from the way I know him, is about as undefensive as I know any of my colleagues to be.

As I mentioned earlier, among the twenty-four cases which formed the

basis of our original research project were four "misses" as far as the predictive or postdictive task of the Rorschach technique is concerned. In one of these misses the Rorschach record gives the impression that the patient had a slow-growing cancer while the medical indication put him clearly in the "fast" category. The rather dramatic course of events in this case may be more instructive than any examples we have covered so far. Therefore, I am inserting here the report of these events as given to me by one of the patient's physicians, Dr. Philip West, in a personal communication.

"Mr. Wright had a generalized far advanced malignancy involving the lymph nodes, lymphosarcoma. Eventually the day came when he developed resistance to all known palliative treatments. Also, his increasing anemia precluded any intensive efforts with X-rays or nitrogen mustard, which might otherwise have been attempted. Huge tumor masses, the size of oranges, were in the neck, axillas, groins, chest and abdomen. The spleen and liver were enormous. The thoracic duct was obstructed, and between 1 and 2 liters of milky fluid had to be drawn from his chest every other day. He was taking oxygen by mask frequently, and our impression was that he was in a terminal state, untreatable, other than to give sedatives to ease him on his way.

"In spite of all this, Mr. Wright was not without hope, even though his doctors most certainly were. The reason for this was, that the new drug that he had expected to come along and save the day had already been reported in the newspapers! Its name was "Krebiozen" (subsequently shown to be a useless, inert preparation).

Then he heard in some way, that our clinic was to be one of a hundred places chosen by the Medical Association for evaluation of this treatment. We were allotted supplies of the drug sufficient for treating twelve selected cases. Mr. Wright was not considered eligible, since one stipulation was that the patient must not only be beyond the point where standard therapies could benefit, but also must have a life expectancy of at least 3, and preferably 6 months. He certainly didn't qualify on the latter point, and to give him a prognosis of more than 2 weeks seemed to be stretching things.

However, a few days later, the drug arrived, and we began setting up our testing

program which, of course, did *not* include Mr. Wright. When he heard we were going to begin treatment with Krebiozen, his enthusiasm knew no bounds, and as much as I tried to dissuade him, he begged so hard for this "golden opportunity," that against my better judgment, and against the rules of the Krebiozen committee, I decided I would have to include him.

Injections were to be given three times weekly, and I remember he received his first one on a Friday. I didn't see him again until Monday and thought as I came to the hospital he might be moribund or dead by that time, and his supply of the drug could then be transferred to another case.

What a surprise was in store for me! I had left him febrile, gasping for air, completely bedridden. Now, here he was, walking around the ward, chatting happily with the nurses, and spreading his message of good cheer to any who would listen. Immediately I hastened to see the others who had received their first injection at the same time. No change, or change for the worse was noted. Only in Mr. Wright was there brilliant improvement. The tumor masses had melted like snow balls on a hot stove, and in only these few days, they were half their original size! This is, of course, far more rapid regression than the most radio-sensitive tumor could display under heavy X-ray given every day. And we already knew his tumor was no longer sensitive to irradiation. Also, he had had no other treatment outside of the single useless "shot."

This phenomenon demanded an explanation, but not only that, it almost insisted that we open our minds to learn, rather than try to explain. So, the injections were given 3 times weekly as planned, much to the joy of the patient, but much to our bewilderment. Within 10 days he was able to be discharged from his "death-bed," practically all signs of his disease having vanished in this short time. Incredible as it sounds, this "terminal" patient, gasping his last breath through an oxygen mask, was now not only breathing normally, and fully active, he took off in his plane and flew at 12,000 feet, with no discomfort!

This unbelievable situation occurred at the beginning of the "Krebiozen" evaluation, but within two months, conflicting reports began to appear in the news, all of the testing clinics reporting no results. At the same time, the originators of the treatment were still blindly contradicting the discouraging facts that were beginning to emerge.

This disturbed our Mr. Wright considerably as the weeks wore on. Although he had no special training, he was, at times, reasonably logical and scientific in his thinking. He began to lose faith in his last hope which so far had been life-saving and left nothing to be desired. As the reported results became increasingly dismal, his faith waned, and after two months of practically perfect health, he relapsed to his original state, and became very gloomy and miserable.

But here I saw the opportunity to *double-check* the drug and maybe too, find out how the quacks can accomplish the results that they claim (and many of their claims are well substantiated). Knowing something of my patient's innate optimism by this time, I deliberately took advantage of him. This was for purely scientific reasons, in order to perform the perfect control experiment which could answer all the perplexing questions he had brought up. Furthermore, this scheme could not harm him in any way, I felt sure, and there was nothing I knew anyway that could help him.

When Mr. Wright had all but given up in despair with the recrudescence of his disease, in spite of the "wonder drug" which had worked so well at first, I decided to take the chance and play the quack. So deliberately lying, I told him not to believe what he read in the papers, the drug was really most promising after all. "What then," he asked, "was the reason for his relapse?" "Just because the substance deteriorates on standing," I replied, "a new super-refined, double-strength product is due to arrive tomorrow which can more than reproduce the great benefits derived from the original injections."

This news came as a great revelation to him, and Mr. Wright, ill as he was, became his optimistic self again, eager to start over. By delaying a couple of days before the "shipment" arrived, his anticipation of salvation had reached a tremendous pitch. When I announced that the new series of injections were about to begin, he was almost ecstatic and his faith was very strong.

With much fanfare, and putting on quite an act (which I deemed permissible under the circumstances), I administered the first injection of the doubly potent, *fresh* preparation—consisting of *fresh water* and nothing more. The results of this experiment were quite unbelievable to us at the time, although we must have had some suspicion of the remotely possible outcome to have even attempted it at all.

Recovery from his second near-terminal

state was even more dramatic than the first. Tumor masses melted, chest fluid vanished, he became ambulatory, and even went back to flying again. At this time he was certainly the picture of health. The water injections were continued, since they worked such wonders. He then remained symptom-free for over two months. At this time the final AMA announcement appeared in the press—"nationwide tests show Krebiozen to be a worthless drug in treatment of cancer."

Within a few days of this report Mr. Wright was re-admitted to the hospital in *extremis*. His faith was now gone, his last hope vanished, and he succumbed in less than two days."

Mr. Wright's Rorschach record was obtained before his transformation from optimism to pessimism took place. It reflects the picture of a personality with what I called previously a "floating island ego organization." This is reflected in his actual behavior and the great ease with which he followed first the suggestions of the drug advertisement and later on the deliberate experimentally motivated suggestion of his doctor without any sign of defensiveness or even criticalness. His ego was simply floating along and therefore left all available vital energy free to produce a response to the cancer treatment which seemed nothing short of miraculous.

Unfortunately this situation could not last since it was not reinforced by any deep-rooted personality center with a long-range point of view which could have counteracted the catastrophic effect of his disappointment about the drug. To use a symbolic analogy, while he was floating along on the surface of the water under the influence of his optimistic auto-suggestion or suggestion, he was transformed into a heavy stone and sank to the bottom without any resistance at the moment when the powers of this suggestion expired.

This analogy with the body swimming in water could also be used to express the whole core of our hypothesis figuratively (what we described previously as ego defensiveness): It could be described as a fear of life

or death or both. Just as a person who is afraid of the water has a hard time learning to swim, so has a person who is afraid of life or death a hard time to fight against cancer. One can only utilize the carrying power of water optimally if one gives oneself trustingly to this element and then uses all acquired skills of moving around in water to maintain oneself and get to where one wants to go; thus the cancer patient has to have a deep-rooted confidence in life and an attitude to death which is not colored by terror but considers it simply as one of the forces one has to contend with in order to conduct a successful fight against cancer. The superficial success of Mr. Wright was also due to lack of ego defensiveness but could only last as long as reality testing could be avoided.

There are many other aspects to this material. One of the things I dream about is to go after all these patients given up by physicians and then "cured" by Christian Science practitioners. To study a number of these people who actually had metastasizing cancer and were cured would be an extremely interesting project.

Now I can come back to my idea, what it means; if there is any such connection between either the ego organization or the personality organization of the patient and the rate of cancer growth. The only possible explanation I can think of—but maybe you can think of others—is in a symbiotic relationship between the patient and his cancer. If a good deal of the vital energy the patient has at his disposal is used up in the defense of an insecure ego then the organism seems not to have the vital energy at his disposal to fight the cancer off and the cancer has easy going. If, however, a minimum of vital energy is consumed in ego defensiveness, then the cancer has a hard time making headway. This is the only explanation which makes sense to me.

Now this seems to me extremely important, as a symbolic expression of

the change in our psychosomatic thinking. Psychosomatic medicine started with an attitude that we wanted to find psychological causes for somatic events. Any attempt to follow the idea through with philosophical rigor and scientific exactness leads into difficulties. We would probably almost say today that the whole question of causation of somatic events by psychological factors in the literal sense of the word was probably the wrong question.

I would say that even in the whole philosophical problem of soma and psyche the same is true. The answer, however, is not an empty kind of parallelism. I think the most sensible terminology, even though the book which has been published about it has used not very convincing examples, is the concept of synchronicity by C. G. Jung. I leave it to you to follow this line of reasoning and develop it. I am very much impressed with this particular piece of research

because it points so strongly in that direction.

One other theoretical aspect I want to mention in closing. When I published my first English book in 1942, "The Rorschach Technique," at the end of the foreword I expressed the pious hope that even though we didn't have, at that point, a personality theory, usable as a scientifically developed tool, we shouldn't put all our projective techniques on the shelf and wait hopefully until somebody presented us with a workable personality theory; that in using projective techniques we will slowly but surely come to a crystallization of a usable personality theory; that the development of a personality theory and the practical application of projective techniques have to go hand in hand, and the one cannot wait for the other.

I would say that this research, if anything at all, has very strongly confirmed and strengthened my belief that this is the way it will be.

Symposium: Research with Projective Techniques¹

HERMAN FEIFEL, *Chairman*

I think a little background history is in order for our symposium today. As one of its objectives this past year, the Research Committee of the Society for Projective Techniques took upon itself the task of surveying the literature of 1956 for the purpose of selecting what it considered to be some of the best published articles involving research with projective materials.

The literature covered was limited arbitrarily to 6 journals which we felt encompassed the great majority of articles in this area. They were:

(1) *American J. Orthopsychiatry* (2) *J. Abnormal and Social Psychology* (3) *J. Clinical Psychology* (4) *J. Consulting Psychology* (5) *J. of Personality and* (6) *J. Projective Techniques*.

The final selection, by majority vote, and limited to 3 articles, was done by the following members of the Research Committee: Dr. Leonard Abramson, Dr. Henry David, Dr. Herman Feifel, Dr. Ralph Gundlach, Dr. Edith Weisskopf-Joelson, and Dr. Abraham Zeichner.

The three articles chosen were:

(1) "Past experience and present personality dispositions as determinants of selective auditory memory" by Anthony Davids, published in the September 1956 issue of *Journal of Personality*.

(2) "The TAT and anti-social behavior" by Kenneth Purcell, published in the December 1956 issue of the *J. of Consulting Psychology*.

(3) "The Negation TAT: a projective method for eliciting repressed thought content" by Richard M. Jones, published in the September 1956 issue of the *J. of Projective Techniques*.

This selection does not imply that

these were the *only* publications during this period that the Committee felt were very good. There were, for instance, David Shapiro's paper "Color response and perceptual passivity" in the March 1956 issue of the *J. Projective Technique*, Vol. II of Bruno Klopfer's "*Developments in the Rorschach Technique*," and others.

It has been heartening to see the progress made in the research use of projective materials. The more bizarre techniques are fading away; increasing attention is being devoted to underlying theory, e.g., relating Rorschach studies to general perceptual theory with promising use of psychoanalytic ego psychology; attention has been given to more suitable criteria and better validation procedures; and there has been more sophisticated use of the statistical armamentarium.

Nevertheless, there are still shortcomings. Surveying the mounting mass of quantitative research in the field one sometimes wonders, in evaluating it on a qualitative basis, whether, as John Rothney has suggested, the Red Queen's statement to Alice does not apply: "It takes all the running you can do, to keep in the same place."

The purpose of our symposium is to focus on what we regard as good research in the area — emphasize our own criteria and goals so-to-speak — by discussing and evaluating concrete articles. We hope, in this manner, to endorse certain conceptions of research and possibly indicate future directions of activity. We hold no illusions about our comments serving as edicts or sacrosanct promulgations. Rather, we view them in the nature of a springboard to a give-and-take sharing process with you. We look forward to your questions and comments later on.

¹ Presented at the annual meeting of the American Psychological Association, Sept. 1, 1957.

Research with Projective Techniques¹

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Our Chairman assigned us a presumptuous but highly rewarding task in asking each of us to select his nomination for the research-article-of-the-year, for 1956, in the field of projective techniques. Presumptuous because of having to select one among the many interesting, creative, and thought-provoking articles encountered in attempting to meet such a delimiting assignment, and highly rewarding for much the same reasons. In reviewing the projective techniques literature of 1956, I sought articles which were, of course, solid research, derived from and related back to theory, well designed and well executed. But over and above this, and perhaps with an element of personal bias, I looked for research that was novel in conception and intent upon pushing the frontiers of projective techniques and projective methodology into relatively neglected but seemingly important areas of personality assessment. With these criteria of selection in mind, my vote went to Anthony Davids' article: Past experience and present personality dispositions as determinants of selective auditory memory, *Journal of Personality*, September, 1956. In following up on the article, I became aware that the present article is but the latest of a series by Davids on this topic, the earlier ones providing necessary background and the present one carrying forward the earlier work in a systematic manner.

Projective techniques have relied almost solely on the eliciting and analysis of misperceptions and misapprehensions in the one sense modality of vision. Granted that most of our

knowledge enters the mind through vision, with appeals through this modality augmented all the more with the advent of television, the auditory channels seem to have been strangely neglected in projective psychology. It is all the more strange when we consider that the first projective technique, word association, was an auditory one, that psychotherapy is conducted on the whole verbally, not visually (despite the recent re-emphasis upon non-verbal aspects of communication), and that auditory misperceptions are much the more common in and out of psychopathology. Suspiciousness and paranoia more commonly befall the deaf than the blind.

When I studied with and served as a student assistant to B. F. Skinner at Minnesota in the late 1930's, the "verbal summator" had already been devised and had been put into use, as the "tautophone," by Shakow and Rosenzweig at Worcester. Subsequently little was *heard* about this technique. The literature on other attempts at auditory projective techniques is indeed sparse, although there have been a few within the past few years. One such, that by Sydel Braverman, at the Woodrow Wilson, Virginia, Rehabilitation Center, in which I had occasion to participate as a judge, used a variety of auditory stimuli, both sound effects and verbal stimuli, the latter nonsense and contentual, enacted by professional actors and actresses. The results of her research are in process of analysis.

Davids' utilization of this sense modality is more circumscribed and thus the more clearly delineated as a preliminary technique in process of development, aimed at personality evaluation through selective memory for unambiguous and clearly presented

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contentual or thematic stimuli. Used as a content, rather than structural, projective technique, it thus derives from, and extends into the auditory modality, the pioneering work on the TAT of Murray and associates at Harvard, with whom Davids collaborated in research antecedent to the present article (see: Davids, A., and Murray, H. A., "Preliminary appraisal of an auditory projective technique for studying personality and cognition," *Amer. J. Orthopsychiat.*, 1955, 25, 543-554).

Davids' auditory projective technique, aptly named the Azzageddi Test after Herman Melville's devil, who confounded and confused those whom he entered, is a cleverly planned and skillfully constructed combination of sentences and phrases put together in the order of a Latin Square design with controlled randomization. The technique was designed to measure selective perception, interpretation, and retention of auditory stimuli representative of eight "dispositions" of personality: sociocentricity, trust, optimism, egocentricity, distrust, pessimism, anxiety, and resentment. The latter five the author combines on the basis of his earlier work into the subjects' responses to negative ideas, which combination he terms "alienation" syndrome. He then correlates these five as a unitary syndrome, with his other measures. The stimulus material of the Azzageddi Test, then, consists of eight spoken passages (the technical details of the presentation itself not described for the reader), constructed by intermingling sentences and phrases expressive of these eight dispositions. Each passage focuses upon and emphasizes one of the eight, but includes phrases and sentences selected to express ideas of the other seven as well. To describe the procedure in more detail, each passage includes four statements reflective of a single disposition and six short phrases each again associated with a different disposition. By systematically rotating the positions of the phrases and

statements in order to control for serial position with a view to equating the effects of primacy and recency on the subject's learning, retention, and recall, the author has constructed an auditory projective technique noteworthy both in conception and in design.

An example may be of interest. The major theme of the following passage let us leave for the moment to the listener:

"Beware of sly men, laden with malice, breeders of dirty lies, and smearers of character. Boiling with rage. Opportunities for happiness are unlimited. Disbelieve. It is not what we take up for ourselves, but what we give up for others that truly makes us rich. Trustworthy men. Have confidence in yourself and in your future. Life is a great goblet of glorious possibilities, brimming over with enough delight to make us giddy. Equality for all. Never lose faith in your fellow men. Desire for power. Let neither sorrow nor disappointment bend you down to earth. Peril upon peril. People love themselves above all others."

It might seem fairly obvious that the major theme is optimism, with the various dispositions of the alienation syndrome only jarring but not over-weening. However, in testing out the instrument with normal Harvard College students, being studied in a long-term and large-scale personality study descended in procedures and techniques from the earlier *"Explorations in Personality,"* quite varied responses were obtained. These responses in turn correlated well with other test measures and with ratings based upon independent interviews and with analyses of the students' autobiographies. Selective perception was clearly demonstrated, and the potentials of the technique for clinical use were pointed out by Davids, including prediction in a replication, with suitable statistics, including non-parametric statistics where applicable, and with appropriate scientific caution.

In addition, as criterion measures of past experience and of present personality dispositions the author constructed two inventories; an "inven-

tory of life experiences," and an "affect questionnaire." Although these two instruments were not subjected to rigorous standardization, inasmuch as they were constructed as experimental tools for the purpose of the present research, they were planfully and skillfully produced. A thorough presentation of the affect questionnaire is given in Davids' article, "Alienation, social apperception, and ego structure," published in the *Journal of Consulting Psychology*.

Davids' original and novel projective technique was devised for and employed in the pursuit of testing hypotheses derived from current learning theory, a usage of the projective point of view with which, I am sure, we are all in accord. Projective techniques and methodology, so used, enter properly into the larger science of psychology, where they belong—a far cry from the days when projectives were new, practitioners with projectives few, and accusations of cultism were often made about them. Davids seeks to test, through his technique, which properly fits into projective methodology, the broad fact of the acceptance in all current theories of personality, based, Davids notes, on the abundance of evidence from psychoanalytic case studies and from experiments in conditioning and learning, of the influence of experiences upon the course of development. More specifically, in the field of perception-personality relationships, he is influenced by, and has planned his continuing research in line with, the Bruner and Postman "expectancy" or "hypothesis" theory of perception, "hypothesis" being defined as a highly generalized state within the individual to respond selectively to certain classes of events in his, the perceiver's, environment. Past experiences and confirmations, and present personality dispositions become determinants of what is selected, what is retained and readied for recall, and what is not. Viewed as dispositions more than as structure, this readiness might per-

haps be better explained by the more fluid transactional theory of perception, in which the object-as-perceived is altered by the perceiver in the act of perception, rather than in interactional theory of interaction between presently fixed perceiver and fixed object, which Davids selects. Projection is seen by Bellak (in Abt and Bellak, *Projective Psychology*) as the greatest degree of apperceptive distortion, the latter defined as the new experience being assimilated to and transformed by the apperceptive mass, the residuum of past experience. Projection thus becomes only an extreme form of alteration of the stimulus itself, that is to say, it is itself altered in the transaction. Selective perception may enter into the selection of theory. However, this issue is not of primary importance here. Regardless of the perceptual theory, it is agreed, and Davids operates upon the assumption that dynamic factors influence and determine perception.

Davids' research, in particular, brings projective methodology into the field of experimental studies of selective perception as an ego defense against anxiety, studies beginning with the earlier work of Postman and Bruner, and continuing with the more recent work of these experimenters, and of McGinnies, Lazarus, and others. To these studies in selective perception and attention might be added such concepts as the "selective inattention" of the neo-Freudian, Harry Stack Sullivan. Within this interactional theory of perception, Davids employs a phenomenological point of view. The stress is upon the "internal" factors in perception, rather than external factors, for which, in agreement with Abt and Bellak in their *Projective Psychology*, the evidence is prepotent. Need and value, i.e., dynamic and motivational factors, assume primacy as perceptual determinants. The perceiver is "set" by his past experience and present dispositions to respond in selected ways. And as with the TAT, Davids "sets" his college

student subjects by an appeal to their intelligence. The extent of their involvement and the highly varied and personal results obtained are eloquent testimonials to the prepotency of such an appeal. Parenthetically, it might be added that comparable "sets" on the Rorschach have been shown in studies by Hutt and Gibby and by the present reviewer to have comparable effects upon Rorschach protocols — and to suggest, incidentally, the need for carefully standardized presentations of projective test instructions in clinical practice.

✓ Davids' research is conceptually related to phenomenology, with perception defined in terms of the world-as-experienced and thus to self-psychology. The internal factors in perception are stressed, as related to the subject's internal frame of reference and, more specifically, to his largely conscious self-concept. ✓ Davids asks his subjects to rate themselves on past experience and on present affective personality dispositions, and to rate others similarly. He found the greatest statistical support for his third hypothesis, that those subjects who were themselves higher on the alienation syndrome than were their apperceptions of the degree of alienation of the "average Harvard student" selectively perceived and recalled a greater proportion of auditory stimuli representative of alienation than did those subjects who were lower on alienation than their apperceptions of the "average Harvard student." Here Davids' study may be criticized on the grounds that the subjects' self-ratings and their ratings of others are primarily cognitive measures and do not adequately take into account the fact that affectively determined selective distortions may equally affect the responses to the "inventory of life experiences," as well as the "affect questionnaire" as the subject rates himself on it, his "ideal person" sort (which is still a *self* sort, witness the theory and research on the concept of "ego-ideal"), and his projections (from himself) as to how the

average student would rate the items. All of these ratings tend to be self-ratings and thus are subject to the distortions stemming from the personality characteristics and dispositions of the subjects. The so-called indirect measure of ratings attributed to the "average" student only reflects the more strongly the subject's feeling of alienation from the others. In assuming that the ratings are valid criteria, the author negates his own assumptions that selective perception, retention, and recall are determinants of response. Repression and suppression are just as likely on the questionnaires as on the auditory projective Azza-geddi Test, unless we make the assumption, which we will not make, that the so-called objective personality measures are immune to these effects. Davids does correlate his findings with other findings on the same subjects. The study, however, would have been enhanced if the subjects had been evaluated for the same eight factors on other measures. More valid external criterion measures might then have allowed the author to state more definitively that "hostile, unhappy, etc., persons" tends to respond thus and so on a technique designed to evaluate selective auditory memory, rather than all he can really say, that persons who tend to see, and to note and to recall, hostility, unhappiness, etc., in themselves, and in others, also tend to hear it. In clinical practice we know that persons who distort reality most conspicuously are often those who report themselves as having no problems, that careful and cautious paranoids, for example, may not admit to having feelings of hostility and yet be seen as extremely hostile by others and tend to perceive hostility in their environments, etc. More applicable external measures, or at least a fuller reporting of comparable scores from the measures the author used, might allow for the presentation of "discrepancy scores" between the self-ratings and the criterion measures on the dispositions being studied. It would also

have been of interest to compare the accuracy of the recall and the kinds of distortions made by those subjects rated on the various measures as "alienated," and those rated as not.

To summarize briefly, Davids' research was selected for commendation, as noteworthy research in the field of projective techniques, on the following grounds: its originality in conception, its application of projective methodology in a relatively neglected but highly important sense modality,

its application of projective methodology in the testing of theory and relating findings back to theory, together with its excellence and sophistication of research design and research execution. We sincerely hope that Davids will continue in this line of research.

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Symposium: Research In Projective Techniques¹

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The research study published during the period under consideration which impressed me most is entitled: "The Negation TAT; a projective method for eliciting repressed thought content" by Richard M. Jones, Harvard Psychological Clinic. The following is a brief summary of this study. The subjects were asked to tell two stories to each of five TAT cards, first under standard conditions and then with the instructions to make up the most unlikely story that came to their minds. For each subject the five pairs of stories were given to the subjects' psychoanalytically oriented therapists with the following instruction: "Which story of each pair does more lucidly suggest this patient's repressed psychic content, as you know it?" The therapists did not know by what method the "unlikely" stories had been obtained and any concrete allusions to the negative instructions were deleted. The results indicate that in 46 out of 55 pairs of stories the negation story was rated more suggestive of repressed psychic content. This differential is significant beyond the .001 level. The idea of the negation TAT is based on the Freudian concept of negation as a mechanism by which repressed images can make their way into consciousness. The following is an example of one patient's negation story to Card 8BM.

"He's going to have a baby. Maybe we go back to Christmas at Devil Island when the convicts would hide these tubes, or vials, or whatever you want to call them, up their rectum. They kept their valuables in them. But then again he's not on his back, on his stomach. The doctors could be, say, mercenary, and they are trying to take out his

money. He had a money belt sewed on his stomach."

This example and others make us wonder whether the judges rated the negation stories as more suggestive of repressed content because they are more irrational and "crazy" and less close to the visible stimulus, rather than because of their specific content. Jones sees this difficulty and suggests further studies in which the Negation TAT should be tested as to its efficacy in distinguishing between individuals on the basis of specific repressed material.

Jones considers his study an exploratory one, and he suggests that the utility of the Negation TAT for diagnostic purposes should be further explored.

After having summarized the study of my choice, I ought to say why it is "better" than any other study published during the same year in the journals which I covered. While trying to do that, I discover I might be in the embarrassing position of engaging in an enterprise which goes against my philosophy. I believe we know so little about psychological research, about the methods to be used and the findings to be sought that we should be extremely careful about setting standards for "good" research. If we do so, we might easily strengthen preconceived notions of what research should be like and suffocate innovations which are so badly needed. There will always be some eager beavers who will try to imitate the research certified as "good" by the SPT. Research which might be bad according to traditional academic standards might prove extremely stimulating to the field in an indirect manner.

Thus, I have found many studies

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for the period and the journals which I covered that can be predicted to boost the development of psychology. These studies are qualitatively so different, i.e. they are good in so many different ways that it would be as impossible to say which one is best, as it is impossible to say whether a fur coat is better than an automobile. From these studies I have selected one which has special personal appeal to me, because it has characteristics which I value highly on the basis of my own, subjective value system. These characteristics are:

(1) *Originality.* Jone's study introduces a principle, namely the principle of Negation, into the field of projective techniques.

(2) *Holistic methods of measurement.* Respectable academic psychologists might object to having a study singled out which uses only 11 subjects. However, I feel the small number of subjects is compensated by the type of information available on them, namely the judgment of their therapists. In my opinion such ratings compare favorably in validity to objective test data and to similar information.

(3) *Applicability.* If the Negation TAT turns out to be what it promises, it would fulfill the need for a technique which penetrates defenses as effectively as the Rorschach, and which, at the same time, produces concrete case history material as does the TAT. It might become a source of information on how life experiences, such as human relationships, are assimilated in deeper layers of the personality.

(4) *Generality rather than specificity.* The scene is likely to change in the field of psychology within the next decades. Maybe such tools as the Rorschach or the TAT will be discarded as diagnostic techniques and only taught in courses on the history of psychology. Therefore, research in projection which goes beyond specific techniques seems of more lasting significance than more specialized studies.

The Negation technique can be applied to a variety of diagnostic situations and, as Jones writes, to the exploration of primary processes in general. Asking people "what is not" might be an avenue to their unconscious. Thus, this casual little study using 11 subjects might go a long way since it introduces a basic idea.

This concludes my remarks on Dr. Jones' paper. Dr. Feifel has generously given me a little more time, and I should like to use it to discuss a special problem regarding projective techniques which should be given more consideration in clinical practice and in research, namely the problem of "Diagnosis for what?" I dislike the tendency of using tools and techniques for their own sake. Maslow has called this tendency Mean-Centering as contrasted to Problem-Centering and has discussed its disadvantages in his book on *Motivation and Personality*.

I am afraid that our diagnostic tools are often used in an overly mean-centered fashion. For example, quite frequently a battery of diagnostic tests is given to every patient entering psychotherapy. I ask: how are the results of the diagnosis used during therapy? How much do we know about modifying the therapeutic process in accordance with the findings from diagnostic techniques? I do not imply that we do not have any knowledge of this kind, but it strikes me as somewhat scanty. I have found the Rorschach very useful when trying to decide whether a person is border-line psychotic, and this is good to know because interpretive therapy may precipitate a psychosis, and strengthening of neurotic defenses might be indicated. I could probably give many more illustrations of this kind. But I still believe that our knowledge of what to do with diagnostic data is very poor as compared to our knowledge how to produce such data and to our eagerness to do so.

This criticism is not limited to the applicability of diagnostic data to therapy, but to any recommendations

to be made or to any clinical procedure to be applied on the basis of projective diagnosis.

The above does not touch the use of projective techniques for the sake of advancing our knowledge about people. Such advancement is a worthy end in itself, and it is likely that the applied clinical aspect of our field will eventually gain from it. Thus, giving batteries of projective tests in public clinics might be defensible purely from this point of view. It is less easy to defend the practice of many private psychiatrists, for example, who refer *every* patient to a psychologist for expensive psychological testing. This is sometimes useful, but often it is not, and I have the feeling that it is occasionally done to impress the patient with fashionable

gadgets. I would hate to see our profession lend itself to such commercialism. I am saying this at the risk of putting my foot into someone's bread and butter.

Concluding, I should like to make the following positive suggestions: Let us gather all the available knowledge on the relationship between personality variables in the patient and clinical procedures to be recommended, and let us search for more knowledge of this kind. Then, let us concentrate on the attempt to diagnose these variables, not necessary to the exclusion of others. Let us be guided by this principle when we develop projective tests, when we interpret them, and when we do research on their validity.

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Research with Projective Techniques¹

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Current psychology and psychiatry now recognize that every person has mental devices for translating his sensory and perceptual impulses in such a way as to aid and bolster his equilibrium and self esteem, or to build his fears and anxieties. We all have our ways of viewing, interpreting and dealing with the events of our world.

That psychologists who *know* that they are always liable to such distorting are *still* willing to try to do research and to strive for such an unattainable goal as objective truth, is a measure of the strangeness of our motivation as well as of the range of adaptability and capacity for self deception, perhaps, of which man is capable. However, the fact that researchers do put in great effort, have strong motivation, are honest in intent, and try to be objective, does not in itself assure that the research work will be good or accurate. So it is that there is a Society for Projective Techniques, that some of its members do research, that it has a Research Committee, and that here we are!!

Projective methods are based upon the assumption that these shadowy non-logical, motivationally determined ways of valuing and perceiving and acting, can sometimes be apprehended and inspected. The individual in the testing situation acts in accordance with the social climate which is his peculiar, unique own; and if he has had no experience with other kinds of climate, he may easily assume his projected world is naturally the same for everyone.

We look to projective tests to provide assistance in two directions: 1) such tests may aid the clinical prac-

itioner in the appraisal and treatment of any individual. Thus, as they fit into practical affairs, they require transition and interpretation that is interdisciplinary; and that has practical consequences in that they can affect the course of treatment, the life and happiness of troubled persons. 2) Studies with these tests may bear upon the theory of personality and of mental illness, and if so our scientific understanding and basic orientation for treatment are forwarded.

It is in this context that the Research Committee of the Society for Projective Techniques has arrogated to itself the task of selecting a few research publications of the year 1956, which fit in with *our* preconceptions of what is good research. We hope that this selection compliments the authors, and that it encourages them and others to pursue our common fantasy research goal.

Since our committee has not this year decided the criteria for the selection of the research articles, each of us in our present reporting relies upon his own clinical intuition and personal judgment in evaluating a particular publication chosen by the Committee and assigned to him for report here. Therefore, "the statements made do not necessarily reflect the opinions of the Committee, the Society, the Hotel, etcetera."

I am happy with the choice of the committee in assigning me a very neat paper by Kenneth Purcell on "The TAT and antisocial behavior," which appeared in the December 1956 issue of the *Journal of Consulting Psychology*.

Purcell's research consists in an analysis of some of the TAT responses of a group of army trainees as related to their case-history record of antisocial behavior. The study seeks to

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establish the relationship between selected aspects of TAT reports as representing covert fantasy material, used to predict some aspects of overt behavior described as antisocial.

Previous investigators, such as Henry Murray and Nevitt Sanford failed to find a substantial direct relationship between the intensity of fantasy aggression and its over-expression in a middle class population. Others have reported such a relationship with lower class boys.

Purcell had available at the Mental Hygiene Clinic at Fort Dix army trainees who include both middle and working class persons, and some persons whose behavior has been pretty antisocial.

The measure of overt antisocial aggressiveness was based on the soldier's social history, and was rated on a 7 point scale. The most aggressive person, for instance, had this kind of a record: many trancies, delinquencies and class room misbehavior; in a reform school for four years; convicted of armed robbery; had assaulted several people; was A W O L eight times; caught in possession of drugs; had 4 courts martial; now facing court martial for wrecking the stockade dispensary.

To predict the amount of overt antisocial behavior, Purcell looked to the analysis of the TAT stories from 4 points of view, for four scoring systems. The separate scores were not simply empirical, but relate to the theory he had about personality. He viewed the antisocial behavior as a resultant of a disequilibrium between an impulse system and a control system (as in Freud's id and superego).

1. The impulse system in regard to antisocial behavior was to be measured by a count of instances of aggression in the TAT stories, such as fighting, criminal assault, getting angry, criticizing, running away, resisting coercion, being negativistic, lying, stealing, cheating, dominating or restraining someone else, and so on.

The control system — which may or

may not manage to control the impulse system—is viewed as two-fold; fantasy punishment that is either external or internal. 2. The external punishment score counted the individual's references to external consequences, being caught and punished. It was obtained by summing the frequency of themes directed toward the hero of assault, injury, threat, quarreling, deprivation, domination, physical handicap, or rejection. 3. The inner control system summed the themes of suicide, self-depreciation, feelings of guilt, shame or remorse, and — with qualifications for the actions of the hero—injury to loved ones. 4. A remoteness score was developed on a 7 point scale, to differentiate direct aggression, in fantasy, from more remote aggression such as displacing the object from a person to a group or society, or an animal or an inanimate object; or to shift the action out of the present to some more distant place or remote time. The reliabilities of these rating scales is reported to be between .81 and .96, and intercorrelations between them are substantial.

At this point it is worth noting that the notion of antisocial behavior has taken on a different shade of meaning, being identified or specified as "aggressive antisocial behavior," and it is aggressive fantasies in the TAT stories that are to be counted to predict the antisocial behavior.

Now to summarize the research program in terms of Purcell's hypotheses. Persons have many impulses toward aggressive antisocial action which can be identified and measured in TAT stories; and some of these impulses can be found carried out in overt antisocial behavior. But the impulse to action may be checked by threats of punishment, some of which may be external like being caught and punished, and some may be inner controls such as remorse and guilt. The hypotheses to be tested then, are

that the amount of aggressive behavior is directly related to the num-

ber of TAT aggressive thoughts; that with the more antisocial individuals the aggressive fantasy in TAT stories will be more crude and direct; that overt aggressive activity will be inhibited by both external and internal controls, and the inner controls (i.e. remorse) will be more inhibitory than the external controls (i.e. fear of being punished); that some individuals with strong antisocial trends may utilize themes of external punishment as a justification for more counteraggression, rather than as inhibitory to his own aggressive activity.

With this program the research proceeds: 57 trainees who were psychiatric referrals, not psychotic, not brain damaged, were used as subjects. They were divided into three groups on the basis of their antisocial behavior scores. Comparisons were made between the groups, using both analysis of variance, and "t ratios" of group differences, supporting all the hypotheses. Why Purcell did not directly correlate the antisocial behavior scores with the various scores on the TAT material I find hard to understand.

Before presenting some of the results I wish to comment on the use of a word or two, and discuss a topic of some theoretical importance.

The comment has to do with a shift in the author's use of words and hence meanings, in describing TAT fantasy aggressions. He first views these as part of an impulse system; but then he talks about fantasy aggressive needs: "the gratification of antisocial needs," and, again, "the correlation between covert needs (that is, fantasy) and overt behavior."

On what basis is there an equation between fantasy, impulse and need? How can fantasy be used as identical with need?

Now I want to say some things about Purcell's concept of aggression. Somewhere I get the feeling that, to Purcell in this paper, all aggressive

behavior is assumed to be antisocial, and to be bad. This may be an error of interpretation on my part, but it is based upon some confusions in Purcell's development of his problem.

The title of the research is "The TAT and antisocial behavior." Now antisocial behavior is clearly a term of social functioning, not a scientific term, and hence very difficult to define or describe behaviorally. Purcell goes along with Redl and Wineman's account of the "delinquent ego" which is defined as "the ego whose every effort is bent toward obtaining guilt-free and anxiety-free enjoyment of delinquent impulsivity." This seems not only a circular word-game, where you define the delinquent ego in terms of the delinquent impulsivity, and vice versa, but also leaves me at a loss regarding either term. Antisocial behavior and delinquency have meaning enough in the context of the law, as regards obedience and disobedience, flouting the edicts of authority figures; in terms of overt defiance of the rules and directives of officials.

Purcell makes no attempt to define these terms. He takes an easy way out by simply using social evaluations to classify his subjects. He lets the evaluation of the life history of his 57 subjects, in terms of their conflicts with authority, serve to establish their position on his scale of antisocial behavior, and thus to provide the criterion ratings.

He cannot avoid discussion; and at one point he seems to assume that antisocial behavior is identical with aggressive behavior. He says he is studying "certain personality variables, particularly in terms of the impulse-control balance, in order to establish their relationship to over-aggressive tendencies." That is, to the criterion scores of antisocial behavior. Of course a person might express antisocial behavior by complete withdrawal from society, or in many other ways. But here, it means aggression that is hostile.

Overt aggressive behavior may not be legally antisocial even though it may still be destructive. For instance many men in the armed services dutifully carried out their assignments, and sometimes found great satisfaction in hitting the target. Members of the fire department and the police department often engage in overt aggressive behavior, but it is not usually thought of as antisocial. The behavior of the athlete, of assertive scholars, of vigorous salesmen, of young men seeking to fall in love, may be overt aggressive behavior, but it is often far from being always antisocial, delinquent, or bad. Purcell has not considered or allowed for these possibilities.

On the other hand, in dealing with the TAT stories, Purcell objectively takes the count of various kinds of aggressive behavior, in fantasy, but does not distinguish between overt and covert fantasy acts. In the schedule for selecting aggressive actions, no attempt is made to sort out, for instance, fighting and getting angry, from resisting coercion or rejecting someone.

In my own practice I find many people who are inhibited and fearful of rejection—whose “inner control system” goes into operation so strongly that the therapeutic task for a while is to free them so they can permit themselves some kind of assertive expression. There are of course the persons in the acting-out direction, who likewise mis-perceive reality in their own way, and act impulsively on the basis of a limited segment of a situation.

Purcell, however, has set up a one dimensional scale for his criterion of antisocial behavior, as aggressive. I feel it carries with it the implication of all aggressive action as being hostile, bad impulses, which should be checked by threats of punishment or of shame and guilt. See p. 455, of Purcell's paper for “the deterrent function” of “anticipation of punishment

as a consequence of aggressive behavior.”

Let us now return to the presentation of Purcell's results. We have seen that the data strongly support all the hypotheses; and additional speculation and manipulation of the data bring out other interesting items some of which I shall briefly mention.

1. A positive relation was found between TAT fantasied aggression and aggressive antisocial behavior; and this relation held true for both classes when the subject population was divided into middle and working class. Earlier studies had failed to show this relationship, but Purcell points out that his subjects showed a tremendous range of aggressive antisocial behavior; and he found evidence to support the notion that in certain impulsive antisocial individuals, fantasy is no substitute for direct action but actually is a spur to act-out.

2. Purcell did find that lower-class members show greater antisocial behavior than middle class members, and he accepts the notion that this reflects a freer rein to impulse in the lower class. But the results here reported still show that whether in middle or lower class men, strong antisocial behavior goes along with more aggressive fantasies and/or weaker internal control systems.

3. Regarding remoteness of aggressive fantasy, the antisocial subjects were more direct and less remote than the nonantisocial. Thus, the defensive inhibitions alter not only the quantity of aggressive themes, but also the way they are formulated.

4. Anticipation of external punishment as a consequence of aggressive behavior occurred equally with the various social and antisocial groups. But among the least antisocial group there was a significantly larger number of punishment themes unrelated to aggressive acts, as if punishment may be just arbitrary.

5. The antisocial subjects tend to

justify their aggressive reactions by pointing to harsh treatment. The antisocial individual seeks proof that the world is against him and hence he has no need to recognize obligations, but rather has a right to get even. Purcell suggests, then, that a policy of retaliation would tend to reinforce this maneuver and make it easier for the delinquent to pursue his antisocial course. The evasion of guilt, shame and remorse is more prominent in the antisocial individual than is the lack of awareness of meaning of the action or concern with punishment.

6. Finally there is the hypothesis that fantasy behavior has a compensatory function—that some people act aggressively, others take out the impulse in fantasy. Purcell's findings support not this hypothesis, but the opposite view: that fantasy aggression is positively related to overt aggressive actions. Purcell, however, does not find this a contradiction. He suggests two notions that need to be considered: it may be that his subjects included some persons characterized by such extensive antisocial behavior and

aggressive fantasies as to obscure any shifts in the nonantisocial subjects. And further, he suggests that people may differ as to the uses of fantasy aggression: for instance that among the antisocial individuals aggressive fantasy may serve as inciting and a spur to antisocial behavior; while among others, such as his nonantisocial individuals, such fantasy may serve more as an adaptive and defensive measure, a substitute.

This completes the presentation of the findings of Purcell's study. As he points out regarding the uses of TAT material, it is important to evaluate the inhibitory, repressive, controlling items as well as to score for the usual Needs and Presses.

In conclusion, may I commend Dr. Purcell for the insightful selection of the material available to him as a basis for testing these notions about fantasy and overt aggressive behavior, for the thoughtful analysis of TAT materials, and for his effective utilization of statistical and analytical procedures to provide clear-cut results.

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Europe—Once Over Lightly¹

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As one of 98 psychologists on the APA charter flight to the XVth International Congress of Psychology, I had a very brief opportunity (less than four weeks) to learn something of current European approaches to research with projective techniques. By modern standards, this probably makes me expert enough to write a book. All I can offer, however, are some light weight, superficial observations, strictly limited by personal experiences that may or may not have been representative.

The APA flight was unique, bringing together on a DC 6 B airliner a total of 98 assorted colleagues, including wives, husbands, mothers, fathers, and one each son, daughter, brother, and sister. Home addresses ranged from Bar Harbor, Maine, to Tacoma, Washington. Sociability was fostered by cramped quarters, and later by an all too brief stop at tax and duty free Shannon.

The Brussels Congress was sponsored by the International Union of Scientific Psychology, a body of national psychological associations currently numbering 26, including the APA and its Soviet Union counterpart. Some 1,200 individuals attended, 30 percent coming from the United States. It may have been symbolic perhaps of the sheer size of American psychology which must at times appear almost overwhelming to our friends abroad.

Our symposium chairman asked me to bring back "the current trend in Europe," and to say something about similarities and differences between European and American approaches. The assignment was an impossible

one; at least for me. It all depended on whom you met, what you discussed, where that colleague was working, and, perhaps most important, the interests and attitudes of the senior professor of the institute or department concerned. I found no one single European trend.

If there was any broad thread through the varied papers and symposia, it may have been the considerable emphasis on and interest in American statistical techniques. When a question about Latin squares or factor analysis evoked a puzzled look, it was considered strange that I did not know. German graduate students and instructors were particularly noteworthy for their quantitative sophistication, far more than might have been expected in view of the philosophical psychology of their elders.

The one symposium on projective techniques, ably organized and chaired by Gardner Murphy, featured a French and English language debate on theory, perception, and validation. It was argued by several participants that theoretical matters only confused validation, and that it might be better to forget about theory and concentrate on the practical utility of projective methods. This attitude was also reflected in two paper reading sessions; it was countered only rarely, most effectively by Henry Murray. It is difficult to estimate, however, how representative this was of European projective psychology; very few people well identified with the field were present. The Congress seemed to attract colleagues with more experimental interests.

What impressed me most at Brussels was that European psychologists read our journals, far more than we do theirs or even our own. Many papers

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indicated that pertinent American research had at least been noted. The Russians were well informed, not only on conditioning, but also on child psychology (which they call pedagogical psychology). Their studies are still prefaced with a bow to Pavlov and there is no official mention of Freud or Rorschach. In later conversations, however, it became clear that tests have been developed and are being used. The reporting of numerical scores is discouraged and, I was told, there is no demand for projective techniques in either the Soviet Union or the satellite countries.

After a few beers with continental colleagues (in the Cité Universitaire and elsewhere) it became quite evident that clinical psychology, as we know it, has almost no counterpart abroad. University psychology departments seldom welcome clinical research and only a few give graduate degrees in the area. In most countries those who consider themselves clinical psychologists are physicians with specialized postgraduate training. They are taught to administer and interpret projective techniques (by psychiatrists and sometimes by psychologists), and usually are the only ones permitted by law to do psychotherapy. In Switzerland psychologists are not officially allowed to attend medical school lectures but are frequently "invited." Any type of therapy requiring less than 20 hours is called "counselling" and may be practiced by psychologists; if it exceeds 20 hours it becomes "therapy" and must be in association with or supervised by a physician. Psychologists who want to practice as clinicians are often employed in public institutions at substandard pay, usually working with difficult children. Research is frequently oriented toward endocrine disorders, of which schizophrenia is considered to be one.

France, at the moment, offers little hope for clinical psychology. No university gives a degree, all testing must be done blindly, and the entire field is strongly controlled by medicine.

Major efforts are directed to the translation of American tests. In Germany it depends very much on where you go and whom you meet. The range is from philosophical psychology (Mainz) through projective personality studies (Freiburg) to experimental, statistical approaches (Munich), with many other institutes along this very rough continuum. Students are expected to be familiar with standard tests. While child, industrial, and forensic applications are emphasized, degrees are given in the clinical specialty. Italian psychology is expanding in the hands of younger men but clinical services are still limited by cultural elements.

There was no opportunity to visit other European countries but I was impressed by the high calibre work presented in Brussels by colleagues from Holland and the Scandinavian lands. The American influence seemed strong, particularly along industrial-clinical lines. Great Britain reflects the differing approaches of Tavistock and Maudsley, with much of which you are already familiar.

After the Congress I asked Ewald Bohm to comment on Europe and America from the standpoint of a European. As you know, he is one of the top Rorschachers abroad; his textbook is a best seller (Huber) with an American translation in press (Grune and Stratton). Bohm talked about "scientific superstitions" and offered the following as particularly descriptive of Americans:

1. Constitution is a hoary concept; heredity was not discovered by Mendel but by the Nazis, and has long since been tossed out the window.

2. Literature more than two years old no longer contains any scientific truths and therefore may be safely disregarded.

3. All scientific progress is "made in USA"; the other 92 percent of the world's inhabitants whose native language is not English are "underprivileged people." Since what they do is of no scientific interest, there is no

sense in learning foreign languages.

4. It is below a Senior Psychologist's dignity to use a test, especially the Rorschach, without introducing technical changes. Changing the ground rules as much as possible affords the inestimable advantage of not having to pay attention to the publications of other authors; anyway, their findings are no longer strictly comparable.

5. Everything and anything can be proven statistically, especially concepts and hypotheses lacking intrinsic quantitative aspects. A few curves and diagrams "prove" the scientific value of any study, regardless of the pertinence of the underlying rationale.

Of course, these are tongue-in-cheek comments, but Bohm feels equally severe about the "scientific superstitions" of his European colleagues. He suggests five:

1. One can philosophize about any problem; it is therefore below the dignity of an academician to present any case study without a philosophical introduction.

2. The epitome of a scientific education is attained when you can express yourself in the most difficult to comprehend manner. The reader develops feelings of inferiority and his admiration for the author grows accordingly.

3. An ingenuous formulation is far more important than the correctness of the assertion made.

4. A scientific theory can be "beautiful" even without a solid foundation of facts; such lack does not impede scientific theory. After all, the Americans will surely evaluate it sooner or later, and they have IBM machines.

5. The historical introduction is more important than your own contribution to the discussion of a current problem. It is therefore best to begin with Adam and Eve, Noah at the latest, and to use as many pages as may be required, at least four times the length of the discussion. Anyhow when your scientific qualifications are judged, only the total number of pages really matters.

While Bohm's comments are meant to be humorous, there is some truth in each. We all have our idiosyncracies, and sometimes it helps to look at them through the other fellow's eyes.

Three weeks later, walking on the Champs Elysees or surveying the scenery of Place Pigalle, there were joyful reunions with APA charter flight colleagues. We were eager to talk of our travels, ranging from Yugoslavia to Israel. The return trip was even more sociable and the whole idea seemed well worth repeating. (The saving in money alone was 45 percent.)

In all, the Congress was a stimulating and satisfying experience. It provided an opportunity to meet people with whom I had corresponded or whose work was similar to mine. There was time for exploration, for discussion, and for argument. Friendships developed spontaneously, with warmth quickly penetrating the usual reserve. It was completely different from the usually hectic, job shopping APA. We are already planning to attend the 1960 Congress, wherever it may be.

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Research with Projective Techniques, Some Trends¹

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The authors whose provocative papers were selected and the discussants' evaluations of them leave little more to be said about their specific findings. They have made contributions which will eventually prove to have added some knowledge, stimulated new research efforts, and suffered from limitations. They will be viewed as authoritative by some for a number of years and then their defects will catch the eagle eyes of others who from the vantage point of next year's knowledge will go beyond these findings. It is easier to find flaws in research than to rectify them.

What I should like to do is to extrapolate from these three papers to trends in clinical research which they seem to exemplify. From the frame of reference of papers that I have screened, rejected and published for the *Journal of Projective Techniques*, a number of significant trends seem to stand out.

Projective techniques had first to be sold when they appeared on the American scene. Few psychologists were clinicians; more were psychometricians, academicians, or research workers of one sort or another. The kind of individual-oriented psychology that supported projective methods did not find a well-prepared conceptual soil awaiting it, excepting, perhaps, in the phenomenological movement. When the Rorschach Research Exchange was inaugurated 21 years ago, it was essentially the only medium in this country for the interchange of information about projective methods. At present the *Journal* publishes less than a fourth of U. S. articles in projective methods. It played a somewhat pro-

selytizing role in its earlier years for it expressed the interests of a small segment of the psychology community, those interested in the intensive study of the individual. Hence the orientation of many of its papers was toward demonstration of the clinical value and diagnostic cook-book use of projective methods, particularly the Rorschach. Even as recently as a decade ago, the *Journal's* articles tended to be diagnostic, normative and didactic and somewhat out of the arena of personality theory per se. The three present papers demonstrate the value of extracting problems from clinical realities and handling them with the best traditions of psychological research methods and theories. It is noteworthy that these papers make use of projective methods less for diagnosis than for exploring the nature of personality. Perhaps the split psyches of those converted during the war years from academicians to clinicians are mending. Or are we developing a new psychological genus whose psyches find no conflict between research methods and clinical interest?

The *Journal* now publishes very few case studies or blind empirical group difference studies. It has also expanded from the original Rorschach preoccupation to include many tests, some of which are only vaguely projective in nature. Perhaps this is due in part to the gradual inclusion of projective psychology into the body of perceptual-personality theory.

Developmental changes in our theoretical formulations have led to ingenious experimentation upon more complex hypotheses, more germane to the understanding of individuals. Not long ago and now to a lesser extent, clinical research studies were made on the basis of rather simple motivation-

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al data, drives, traits and the like. Experiments such as those of Purcell, Jones, and Davids show clear recognition of the futility of attempting to predict directly from fantasy or other evidence of single drives to overt behavior. The problem, of course, is that there is a good deal of psychologic substance between drives and behavior. In other words, the expression of a motive in one context or at one level of psychological organization is not highly correlated with its manifestations at another psychological level or in other stimulus contexts. We are piling up more and more evidence that the ego is not a flat surface or a psychometric map, but has hierarchical properties, particularly when the focus of inquiry is the individual person.

Psychologists are tending to shift their emphasis from drive constructs to more complex concepts such as ego defensive and coping mechanisms. Similarly, the vanguards of psychoanalytic theory are moving toward putting the id in its place as a less useful descriptive and explanatory concept than those of ego functions and object relations. The evidence now is that the crucial data are not the motivational content of fantasy alone, but the unique ways in which these universals are handled in interpersonal situations. Our authors suggest that the mere presence or absence or frequency of occurrence of projectively aroused fantasies are insufficient evidence for prediction because they carry no indications of the degree of probability of their expression in specific situations. Jones has found another way of finding out what the hidden motives are. Davids and Purcell reveal some of the enduring internal factors that regulate their expression. Purcell shows nicely how prediction or postdiction is enhanced by studying intrapersonal integrations of aggressive drives and social expectations. Davids demonstrates that an interaction effect or dynamic relationship between experiences and present atti-

tudes improves prediction over biographic data alone.

Part of the de-emphasis of trait concepts has involved a lessening of uni-dimensional characterizations. We are learning to think of persons not as more or less hostile or passive or zomboid, but as manifesting specific forms of these behaviors in specified kinds of situations.

Additionally, recognition that fantasy motives are not always directly predictive of overt behavior has been coupled with a retreat from earlier clinical beliefs that the projective protocol reveals the whole story. The projective picture of a client is seen more clearly as one of several pictures. Behaviors revealed in sentence completions, TAT stories and Rorschachs may differ radically from one another and from overt behavior.

Test productions emerge in a new light according to an old principle: that behavior is a function of the stimulus situation. Many recent studies have pointed up the unreliability of response to a single projective test as a function of examiner variables and shifting test-taking attitudes on the part of clients. Similarly, more attention is being given to the nature of the stimuli to which the performance seems to be oriented. Many of us have tended to view the person as seen through a projective test as if his test behavior were endogenous, enduring, and complete. While it is of some importance to know how an individual will endogenously structure his life, seek out and selectively react to stimuli, we are becoming more aware of the fallacy of detaching the projective test estimate of endogenous processes from the stimuli.

Psychologists are becoming increasingly inventive in concocting new stimuli of controlled degrees of structuredness and predetermined dimensions of content in which ambiguity, hence opportunity for variant behavior, is present. There is no longer one projective technique. There are, rather, growing numbers of projective

stimuli which have been designed much as aptitude tests are, to answer concrete diagnostic, descriptive or predictive problems. The evidence suggests that the Rorschach is useless for predictions of aviator success. Either the variables sought out in the Rorschach are inappropriate or the Rorschach is not the proper instrument from which to expect such an answer. David's Azzageddi test is significant not only for its clever use of the difficult auditory mode, but especially for its purposive structuring of projective stimuli for specific purposes. David's is clearly implying that not all of what a man is will be shown in a single test situation, that an ink blot is not a crystal ball. Conversely, he is saying that the existence of some enduring aspects of personality organization is demonstrable only when the psychologist creates a favorable environment for its expression.

In these three papers we see signs of dissolution of conceptual and attitudinal barriers between clinician and research psychologist. The writers show evidence of interest in the individual in all his complexity and point out diagnostic and therapeutic implications, yet produce evidence that adds to our conceptualizations about personality. They are clinical and research papers simultaneously. They show a neat fusion on the one hand of scientific rigor without the rigor mortis of scientific method applied to trivialities and on the other hand a lively interest in the psychology of everyday life without the platitudes into which clinicians can so easily slip.

In this respect, some tribute is due to Freudian psychoanalytic theory as a source of research problems and tentative hypotheses. It may prove to have been a happy accident that American psychologists early in the century veered from the influence of psychoanalytic theory and even from the kinds of problems with which it dealt. Proper scientific evaluation of psychoanalytic precepts cannot easily

be achieved by the methods of psychoanalysis itself. It might be argued that early indoctrination into psychoanalytic theory may develop a trained incapacity that could interfere with a psychologist's ability to entertain other notions or to examine psychoanalytic notions critically. There is some evidence that intellectual organization is affected by one's exposure to the operations, methods and values of one's vocation. It is well that historically psychoanalysis and psychology went their own ways with only the most cool and infrequent contacts. Now that research psychologists have turned their attention to the formulations of psychoanalysis and the psychological phenomena which have been their province, psychologists have the advantages of variety in theory and data and a tradition of scientific method. As recent research publications indicate, psychologists have found in psychoanalytic data a number of provocative ideas which they are able to utilize in their research activities. We seem now to be in a period of evaluating what psychoanalysis has to offer, testing it, adapting it, refashioning it, and integrating it into our own conceptual framework. The number of clinical research papers which implicitly or explicitly are testing psychoanalytic concepts has grown enormously in the last ten years.

Our research discipline is of unquestioned importance in enabling us to tease from a recalcitrant world of phenomena, the anchors in reality that our theories require. There are times, however, when our healthy skepticism may become defensive blindness. There may also be lost time between the emergence of a creative idea and its fruition in demonstrable research data. I am pleased to see that our research trio have an urge to speculate beyond their data, even though it is not yet as fashionable as I should like to see it. The breakthroughs of scientific psychology are likely to come not through cautious

empiricism, but through scientific fantasy tested rigorously. The *Journal of Projective Techniques* is experimenting with a column of indeterminate length as an agora for the communication of ideas, hunches, and fantasies whose authors have neither the time nor the inclination to carry them into the laboratory. Our hope is that the daring and the cautious may be brought together more quickly to their mutual satisfaction.

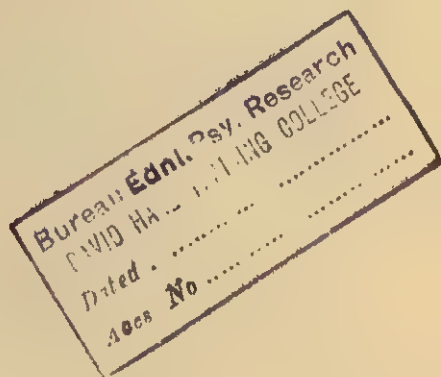
A few more comments.

Is it chance alone that two of the three papers used the TAT and that the third is an auditory extrapolation of the TAT? Is it at all significant that the Rorschach is conspicuously absent? Perhaps the Rorschach is a less adaptable instrument than thematic material for personality research. It would be interesting to do

research on research to learn whether and how the two instruments differ in their research uses. Is it another possibility that the Rorschach having more or less started the trend to projective psychology has primarily a historic status that is being challenged by other methods to the point of being replaced? Or is it finding its proper place as a limited tool having specified utilities? Certainly the spate of papers which attempted to use the Rorschach for everything under the sun has subsided.

Finally: for many of us it will be a gratifying day that sees a symposium similar to this in which we are able to experimentalize the psychotherapy process with such ingenuity as has been shown in the three papers discussed today.

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A Note on Persistent Responses In Longitudinal Rorschach Protocols

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The author has administered the Rorschach Test to a single male subject for the past six years (2). During this period, between the youngster's fourth and tenth birthdates, a total of eighteen protocols have been accumulated.¹ A review of these records discloses three engrams which have appeared consistently throughout the series. While other percepts have been repeated in a scattered pattern, the persistence of these cannot be overlooked.

From rather intimate knowledge of the subject's life history, there does not seem to be an immediate relationship between the child's current life situation and the nature of these percepts. The speed with which these engrams are verbalized upon presentation of the appropriate plates (II and VII) gives the impression that the youngster feels compelled to report them. There are no overt signs of hesitancy to suggest that the subject is trying to recall previous responses to the particular blot-areas.

The first one, elicited at 4 years, is located in Plate VII, D11 (3, p. 221) and shows the following course:

4 years, 2 months—(Second response to the plate) "House, church down here, see there."

4 years, 3 months—2. "A church house far down there." [Inquiry, "Churches have these (steeple) on. If it isn't a church, what is it?"]

4 years, 6 months—2. "Church down here." ["Has this steeple, and two windows. L.I. a Catholic Church like Miss Claire (former nurse) used to go to."]

4 years, 9 months—1. (First response) "A church right down . . ." ("Right down this road.")

5 years—2. " . . . and a church down here

and the sky covering the church." ["Because churches have these (steeple) and there's a window. That's not all of the church, the sky is covering it."]

5 years, 3 months—2. "Church down here, trees too." ["Two big things (steeple), here's a road, and two trees."]

5 years, 6 months—2. "Church." ("A church has things sticking up and windows.")

5 years, 9 months—2. "A church way back, one hundred miles from there." ("A Protestant Church, I mean a Jewish people's church.")

6 years—2. "A church way back."

6 years, 3 months—2. "A church way down"

6 years, 6 months—2. " . . . and a church."

6 years, 9 months—2. "Church." ("A church, windows and a cross on the very top.")

7 years—1. (Now the first response to plate VII) "A church."

7 years, 6 months—1. "A church way down here.")

8 years—1. "A church, a white church."

8 years, 6 months—2. (Back to being the second response) "A church."

9 years—1. 2. "A church at the end."

10 years—1. "Far away I see a church." (This thing sticking up and two windows. It's far away and it's little.)

This percept has shown little change over the past six years. The author, who is the subject's father, and his wife could not recall any undue event centered about a "church" concept that might have occurred about the time of the child's fourth birthday. While there are churches in the vicinity of the home, there has been no emphasis on them beyond the casual conversation between husband and wife and the usual pointing out of places to a growing and curious offspring. This latter notion is as far as the author is willing to go to account for the persistence of this particular percept. A psychoanalytically inclined colleague suggested, at the time of the initial appearance of this engram, that the youngster must have had an indelibly impressive expe-

¹ Quarterly administrations between 4 years and 7 years yielded 13 records, semiannual testing from 7 years, 6 months to 9 years resulted in 4, and the first annual Rorschach at 10 years added the final protocol.

rience revolving around the sanctity of motherhood and a desire to return to the security of the womb. All this symbolized by the acceptable church concept somehow derived from the popular, albeit socially unacceptable, sex response-area (5) in the "Mother" (4) card, Plate VII. This is imparsimonious speculation and *ad hoc* reasoning. It is barely possible that the association is one of congruence of shapes, viz., the stereotyped church design (which incidentally fits the overall form of most local churches) and the shape of the blot area involved in this percept. Why this has persisted is still unexplained on other grounds.

The second (and later the third) engram is located in Plate II. First is the use of the entire plate (W) and then this is separated into D2 and D1+D1. This is the development:

4 years, 6 months—1, W. "Lightning and smoke coming out. I'll show you the lightning (D2) and here (D1+D1) is the smoke, it's black."

4 years, 9 months—1, W. "Lightning and thunder together." ("Here's thunder blasting and here's lightning. Looks like dynamite fell on it; lightning because it's red. Because it's going up in the air like a rocket. Thunder is black and God makes it look like an elephant, but it isn't an elephant. It's thunder.")

5 years—1, D2. "Lightning."

2, D1+D1. "Elephants."

5 years, 3 months—1, W. "Lightning and thunder, two clouds hit together." ("Lightning because it's red. Thunder because it's black and it looks like two clouds hit together, already hit together.")

5 years, 6 months—1, D2. "Lightning."

2, D1+D1. "Two elephants."

5 years, 9 months—1, D2. "Lightning."

2, W. "Two elephants struck by lightning and kept together."

6 years—1, D2. "Lightning."

2, D1+D1. "Two elephants."

6 years, 3 months—1, D2. "Lightning..."

2, D1+D1. "...and two elephants pressing together."

6 years, 6 months—1, D2. "Lightning."

2, D1+D1. "Elephants squeezing together."

6 years, 9 months—exactly the same as above.

7 years—1, D2. "Lightning..."

2, D1+D1. "...and two elephants." ("The black things are elephants. They got their trunks, noses together. They're alive, looks like they're walking.")

7 years, 6 months—1, D2. "Lightning."

2, D1+D1. "Two elephants." ("The black things are elephants. They got their trunks and noses together. They're alive, looks like they're walking.")

7 years, 6 months—1, W. "I see lightning and thunder."

2, D1+D1. "The thunder is shaped like elephants."

8 years—1, W. "Lightning and thunder." ("The black is two clouds hitting together; that makes thunder, and the orange is lightning.")

8 years, 6 months—1, D2. "I see lightning."

2, D1+D1. "Two elephants."

9 years—1, D2. "I see lightning on top."

2, D1+D1. "Two elephants on the side putting their trunks together."

10 years—1, D2. "Lightning." ("It looks like it's exploding. red. Lightning is not red, but in the comic strips, books, lightning is red.")

2, D1+D1. "Two elephants crashing together." ["Got their noses together; not exactly crashing. They are stuffed because elephants are not so zigzaggy (edge indentations). Sticking their tongues out—made that way."]

In these persistent and consistent engrams a more revealing development is observed. Whereas in the "church" percepts the content remains fairly constant and confined to the same blot area (VII-D11), in the second series two distinct percepts (D2 and D1+D1) emerge from the whole of Plate II.

The first "lightning" response to all of Plate II at 4 years, 6 months, has its probable origin in the child's vivid experience of an unusually severe hurricane two days prior to testing. The brilliant lightning bolts and thunderous thunderclaps startlingly lit up the house and shook it to its foundations. The four and one-half year old was visibly and frighteningly impressed despite the reassuring presence of his parents. The severe storm flooded the grounds and seeped into

the house. Electric service was interrupted for days—in all an impressive event. It is plausible to infer that this response epitomizes the child's anxiety in stressful circumstances. Three months later the percept still appears but it is embellished by his interest in a popular television program centered about Space Cadets, rockets, blast-offs, and blast guns. Note the first appearance of the "elephant" concept to D1+D1 in the Inquiry. This represents a mitigation of the anxiety associated with the original "lightning" percept.

Prior to the 5 year, 3 month test the young boy was given an explanation of the phenomenon of a tropical lightning and thunder storm. This is reflected in the W percept in this protocol. The violence of the response is markedly reduced—"lightning" is attributed to color and "thunder" is now a less anxious concept, a favorite child's circus animal—the "elephant." This engram has form value through the protocol for the tenth year. The latter record reveals "lightning" as a comic strip and/or book symbol, thus further reducing its threatening portent. It may be inferred now that the "lightning" response is an habitual, almost automatic, association to the colored (D2) portion of Plate II. Its repetition in the future will effectively substantiate this hypothesis.

This presentation of three longitudinally persistent percepts can not answer entirely the basic question of why they have been consistently elicited in the protocols of one youngster. Despite the intimate knowledge the author has of the child, the reason(s) for the initial appearance and the repetition of the "church" engram are speculative. It does seem more plausible, however, to relate the child's learning experiences to the appearance of the percept than to ascribe a rather ingenious process of symbol-transposition—a process that is obviously too resourceful for a four year-old child.

An explanation of the other two

engrams is more feasible. They originated in a dramatic anxiety-producing situation. Their continuation seemed to be assured by the author's explanation of the natural phenomenon of storms common to subtropical Florida, by the popular television programs for children, and by comic book representations. Even if the "lightning" percept does reflect anxiety in the tenth year protocol, its symbolism has been markedly mitigated. This is evidenced by the continued presence of a popular and non-threatening animal response and an adequate account of the "lightning" idea as well as its allocation to the comic book field. The latter is certainly not foreboding. Yet the question, "Why are these engrams repeated in record after record?", obstinately calls for an answer. The theoretical implications must accord with the basic rationale of the projective method—that (verbal and/or perceptual) behavior is expressive of the personality structure and personal dynamics of the respondent. The explanation for the persistence of these three Rorschach responses does not contradict the essential postulate of projective theory. It simply accounts for their origins in immediate experience and for their continuation in habituation of perception and responsivity.

The essential issue involved in this demonstration is the possibility of misinterpretation inherent in the evaluation of a single protocol. Moreover, inadequate information about a testee's background may result in inappropriate inferences, especially in regard to the deviant engrams. From a realistic and practical point of view, the dilemma does not yield to easy solution. The tester should attempt to obtain data regarding pathological percepts from sources other than the inkblot itself. This does impose upon the test user the responsibility of avoiding blind interpretations (1).

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The Association of Animals with Familial Figures

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In recent years there has been increasing interest in the contentual aspects of fantasy material. The earlier writings of Lindner (4) and Zoltan (7) emphasized interpretation of Rorschach content, and more recently there have been several attempts to score both Rorschach and TAT content in a systematic fashion (1, 2, 6).

In investigating the interpretive significance of animal contents there are two possible approaches. The first is to select criterion groups on the basis of, say roles or attitudes toward familial figures. For example one group of subjects would have loving mothers, and the other group would have punishing, rejecting mothers. Test responses would then be examined to determine whether certain animal content was produced with significantly greater frequency by one group of subjects. The problems of selecting such criterion groups would be considerable, and to the writers' knowledge, no studies of this kind have been reported.

The second approach is to investigate animal symbolism via the association method, wherein ostensible relationships between animals and familial figures are tested empirically. This method does not test directly the clinical significance of animal contents (as does the first approach). Rather it determines whether there is empirical support for the assumptions underlying interpretation of animal contents.

The purpose of the present investigation was to check out some of the symbolic interpretations that are used in connection with the Rorschach. The second approach was used, and the study is patterned after that of Goldfarb (3). He had children associate to the animal contents they had

produced on the Rorschach, limiting the associations to familial or other figures (kind father, cruel woman). The subjects were also presented with a familial figure and asked to give an animal association. Goldfarb used a small number of subjects, and he presented no quantitative data. The present study is an attempt to obtain data on the animal associations of adult neuropsychiatric patients and normals. There were two experiments, each utilizing a different approach to animal associations.

EXPERIMENT I

Procedure

A list of 18 familial figures was read to the subject, one figure at a time. Each subject was instructed as follows: "I am going to read you a series of phrases, and after each one I want you to tell me the name of the first animal that comes to mind. Don't think about it. Try to answer with an animal name as quickly as possible."

The list consisted of seven mother figures, six father figures, and five child figures. The order of presentation was constant for all subjects, as follows: loving father, helpless child, timid mother, unhappy child, punishing father, dominating mother, loving mother, rejecting father, happy child, cruel mother, timid father, kind mother, wicked child, rejecting mother, cruel father, timid child, punishing mother, kind father.

Subjects

The subjects were 100 psychiatric inpatients of both sexes. The purpose of the study was not diagnostic, and therefore none of the usual descriptive statistics (age, education, diagnosis) will be presented. The subjects

TABLE I—Animal Associations (Grouped) To Various Figures ($N = 100$)
Kinds of Animals

Figures	Large Aggressive	Large Neutral	Small Aggressive	Small Neutral	Diminutives	Rejections
<i>Father</i>						
Loving.....	23	22	3.5	43.5	6	2
Kind.....	10	28	1	50	2	9
Timid.....	4	24	8.5	53.5	7	3
Rejecting.....	26	17	17.5	31.5	0	8
Cruel.....	43	14.5	16	20.5	0	6
Punishing.....	43.5	9.5	20.5	17.5	3	6
<i>Mother</i>						
Loving.....	6	28.5	1	54.5	9	1
Kind.....	3	28	2	54	12	1
Timid.....	3	25	2	52	16	2
Dominating.....	28	24	5	38	0	5
Rejecting.....	12	18	11	38	2	19
Cruel.....	31	13	11	31	2	12
Punishing.....	30	12.5	8	38.5	0	11
<i>Child</i>						
Helpless.....	1	2.5	3	42.5	51	0
Happy.....	1	5.5	2	40.5	51	0
Timid.....	1	7	4	44	37	7
Unhappy.....	10	9.5	4	43.5	27	6
Wicked.....	23	5.5	16	32.5	16	7

were 100 successive admissions, most of whom were acute, rather than chronic cases.

Results

Differences between the sexes were small and random, and therefore the men's and women's data were combined. The animal associations to each familial figure were so diverse that tabulating them would be meaningless. For example the associations of the first 10 subjects to timid father were: llama, bird, monkey, fox, lamb, ram, bird, horse, and rabbit. This variability is typical of the associations to all of the familial figures. It is clear that no animal is associated with any particular familial figure.

Goldfarb (3) found that adults were associated with large animals and that cruel adults tended to be associated with aggressive animals. Thus it is possible that familial figures are related not to particular animals but to classes or types of animals. In order to test this possibility animals were classified into five types: large aggressive, large neutral, small aggressive, small neutral, and diminutives (calf, puppy, etc.). Seven judges

were used, and the animals were categorized on the basis of a decision by five of the seven judges. Animals that were not classified as aggressive or neutral by a clear majority were skunk, mink, porcupine, and badger. Also the following animals were not judged clearly to be large or small: hog, sow, pig, and seal. In these instances an animal association was scored half in one category and half in the other.

If a subject did not respond to the verbal stimulus in 30 seconds, it was scored as a rejection. The associations were grouped into five kinds of animals and rejections. These data are presented in Table 1.

Each row of the table adds up to 100, the number of subjects.

Because of the difficulties involved in testing the significance of the obtained frequencies no tests of significance were computed.¹ Inspection of

¹ The same 100 subjects gave their associations to all the familial figures. Since the frequencies of animal associations to the various figures were not independent, chi-square could not be used. However, the trends in the data seem clear enough for interpretation, despite the absence of statistical tests.

the columns in Table 1 reveals that a consistently high number of small neutral animals were given as associations to the various parental figures. Since the small neutral category includes most domesticated pets (cat, dog, rabbit, etc.), this response set is not surprising.

The large aggressive column reveals a clear-cut trend for both paternal and maternal figures. The frequency of large aggressive animals in response to positive figures (loving, kind, and timid) is somewhat less than the frequency in response to negative figures (rejecting, cruel, punishing). The same trend may be seen in the small aggressive column. The large neutral and small neutral columns reveal an opposite trend, although the differences are not as marked. There are fewer aggressive animals given to positive parental figures than to negative figures. The diminutives column reveals a similar pattern, positive parental figures eliciting more diminutives than negative parental figures. No other trends emerge from inspection of the animal associations to paternal and maternal figures.

The data for child figures reveal one major trend. In addition to the response set for small neutral animals, there were a large number of diminutives. In fact small neutral and diminutive animals accounted for virtually all associations to child figures.

The data in Table 1 can be summarized briefly. Aggressive animals are more closely associated with negative parental figures than with positive parental figures. Neutral animals are more closely associated with positive parental figures than with negative parental figures. Small neutrals and diminutives are associated with children. There is nothing new nor startling in these results, but it is reassuring to have empirical verification of cultural stereotypes that are sometimes used in interpreting animal content.

It would be of greater potential use

to discover relationships between specific parental figures and specific animals and perhaps to verify some hypothesized relationships. For example Phillips & Smith state that the response *bear* on the Rorschach "... tends to be associated with a benign and sympathetic father figure ..." (5, p. 120). In Experiment I it was found that kind father and loving father both elicited a wide variety of animal associations. There were so many different animals given in response to each of these stimuli that it was not possible to test the hypothesis that *bear* was associated with them. The sheer variety of responses is presumptive evidence against the hypothesis, but a better test would be to use *bear* as the stimulus and determine if any parental figure is associated with it. This procedure was used in Experiment II.

EXPERIMENT II

Procedure

On the basis of the results of Experiment I and clinical hypotheses, 24 animals were chosen as stimuli. Since the focus of the study was to be on parental figures, six parental figures were chosen as responses. Instead of naming a parental figure in response to each animal, the subject chose one of the six figures as being most closely associated with the animal. This method guaranteed large enough frequencies among the parental figures for hypotheses to be tested.

Selection of the six figures was based on the results of Experiment I. Loving mother, loving father, cruel mother, and cruel father yielded different kinds of animal associations, and they appeared to represent extremes of parental figures. Therefore they were selected as responses. Examination of Table 1 revealed that the adjective *dominating* represents a midpoint between loving and cruel, and therefore dominating mother and dominating father were selected as the fifth and sixth figures.

TABLE II—Frequency of Normals' Animal Associations ($N = 100$) *

	Loving Mother	Domin- ating Mother	Cruel Mother	Loving Father	Domin- ating Father	Cruel Father
Bear.....	37	10	1	6	21	25
Lion.....	21	17	7	3	32	19
Eagle.....	17	16	11	10	28	17
Ape.....	24	9	2	8	30	27
Wolf.....	17	8	6	6	17	45
Alligator.....	13	6	12	4	30	33
Octopus.....	11	23	15	5	21	23
Bull.....	4	3	1	7	50	35
Cow.....	80	8	1	3	3	2
Horse.....	40	7	0	29	16	8
Elephant.....	31	7	1	14	43	3
Deer.....	76	5	1	12	5	1
Snake.....	15	8	18	4	8	46
Spider.....	17	21	18	3	6	34
Crab.....	10	21	9	7	22	31
Frog.....	25	14	12	17	21	9
Chicken.....	61	18	5	1	9	4
Fish.....	43	15	8	17	8	8
Bug.....	24	18	17	8	11	20
Bird.....	66	17	4	8	3	0
Dog.....	29	9	0	24	16	19
Cat.....	53	27	11	0	2	6
Moth.....	47	10	7	13	8	10
Rabbit.....	80	5	3	8	1	2

*The rows in Tables II and III do not all add up to 100 because some subjects did not answer every item.

TABLE III—Per Cent of Patients' Animal Associations ($N = 50$)

	Loving Mother	Domin- ating Mother	Cruel Mother	Loving Father	Domin- ating Father	Cruel Father
Bear.....	40	8	2	6	16	28
Lion.....	22	18	12	8	14	26
Eagle.....	38	12	12	8	20	10
Ape.....	28	16	6	6	20	24
Wolf.....	8	20	18	6	22	26
Alligator.....	28	16	12	6	18	20
Octopus.....	16	26	18	2	20	16
Bull.....	6	8	4	14	30	38
Cow.....	82	8	6	0	2	2
Horse.....	42	4	4	30	14	6
Elephant.....	26	16	4	18	32	4
Deer.....	62	8	0	16	10	4
Snake.....	20	16	14	0	14	36
Spider.....	20	16	22	4	14	24
Crab.....	12	14	8	12	24	34
Frog.....	30	14	4	12	24	14
Chicken.....	70	14	2	2	10	2
Fish.....	34	18	8	28	6	6
Bug.....	20	10	24	6	24	14
Bird.....	54	14	14	22	6	0
Dog.....	56	4	2	16	10	12
Cat.....	50	14	18	8	4	2
Moth.....	34	14	18	16	12	6
Rabbit.....	62	8	6	20	0	2

Subjects

The subjects were 100 normals and 50 psychiatric inpatients of both sexes. The patients were different from those used in Experiment I. The normals consisted of 75 college students and 25 psychiatric aides.

Results

The results are presented in Tables II and III. Examination of the results yielded no systematic differences between college and noncollege subjects, and their data were combined. The patients' data were converted into percentages so that they would be comparable to the normals' data which were based on an *N* of 100. The data of patients and normals are strikingly similar, the differences being small and random. The following account holds for both patients and normals except where noted.

It seems reasonable that an association should be made by at least half the subjects if it is to be useful. Therefore a frequency (or percentage) of 50 was adopted as criterion of meaningfulness.² According to this criterion loving mother is meaningfully associated with cow, deer, chicken, bird, cat, rabbit; dominating father is associated with bull by normals only. Patients associate loving mother with dog, but college students do not. No other associations met the criterion of 50%.

Tables II and III are arranged vertically in the following order: eight large aggressive, four large neutral, three small aggressive, and nine small neutral animals. Inspection of the columns (parental figure response) reveals some interesting trends. The frequency of the response loving mother

tends to be higher for neutral animals than it is for aggressive animals. For loving father the same trend is present but somewhat weaker. These trends are reversed for cruel father, with frequencies tending to be higher for aggressive animals than for neutral animals. The frequencies for dominating mother and father were intermediate between loving and cruel. These trends are essentially the same as those found in Experiment I.

DISCUSSION

The results of both experiments show that few parental figures are associated with specific animals. The only parental figure that both normals and patients associate with specific animals is loving mother. There is empirical verification for the contentions by Phillips & Smith (5) that cow and deer are associated with a kind, loving mother. Their association of bull with dominating father and of diminutive animals with children are also corroborated. However, their postulated associations of loving father with bear and horse, of cruel or dominating father with ape and eagle, and of cruel or dominating mother with spider and octopus all failed to stand up in the present study.

These results suggest that the clinician should beware of making interpretations on the basis of individual animal contents. Evidently there are too few specific cultural stereotypes to allow for such interpretation. On the other hand when animals are grouped by size and aggressiveness, cultural stereotypes do emerge. Punitive parents tend to be associated with aggressive animals and kind parents with neutral animals. Children tend to be associated with small neutral animals or the young of animals. These results suggest that groups of animal contents might be of interpretive significance where single contents would not.

The data of these two experiments corroborate Goldfarb's results (5). He found that there were diverse familial associations to any single animal but

² As in Experiment I the frequencies are not independent, and chi-square could not be used. In any event determining whether the frequencies deviate significantly from chance would not be a stringent enough test. Unless a majority of subjects associate a single parental figure with a given animal, the relationship would not be meaningful in clinical situations.

that aggressive animals tended to be associated with cruel parents, passive animals with kind parents, etc. Since the subjects in the present study were adult normals and psychiatric patients and Goldfarb's subjects were adolescents seen in an outpatient clinic, these results would seem to have considerable generality. Taken together, they argue against attributing "deep" symbolic meanings to animal contents. Rather animal contents should perhaps be interpreted in terms of general cultural stereotypes. Such stereotypes probably develop in two ways. First where the attributes of the animal are extreme, e.g., ferocity in the lion, gentleness in the deer, these characteristics may be associated with types of familial figures. Second colloquialisms and folk-sayings foster animal associations, e.g., "snake in the grass," "stubborn as a mule," "timid as a rabbit." Basic research on such cultural stereotypes might prove to be of value in the clinical interpretation of content on projective techniques.

SUMMARY

Two experiments were performed to determine animal associations to familial figures. In the first experiment psychiatric inpatients gave their

first animal association to each of 18 figures (maternal, paternal, and child). In the second experiment psychiatric inpatients and normals gave their parental associations (via a forced choice technique) to 24 animals. Both experiments revealed that there were few familial figures associated with specific animals. Rather, it was found that animals grouped by size and aggressiveness were related to familial figures. These results suggest caution in interpreting animal contents in clinical situations.

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Characteristics of the Thematic Apperception Test Heroes of Normal, Psychoneurotic, and Paranoid Schizophrenic Subjects

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The present study is an outgrowth of a larger project (5) in which the characteristics of Thematic Apperception Test (TAT) heroes were compared with phenomenological self and ideal self pictures. It is the purpose of this paper to report the manner in which the different groups tended to characterize their story heroes with particular focus upon the positive or negative qualities attributed to such figures.

METHOD

Eighty statements were prepared from the TAT hero characteristics that appeared in a random sample of protocols from people similar to the experimental population and from the common themes to TAT cards as reported by Stein (7). The statements were derived from stories to cards 1, 3BM, 6BM, 7BM, and 14, and reflect the traits and attributes, feelings and emotions, experiences, tendencies toward behavior, goals and orientations that people generally attribute to their TAT heroes in varying degree.

In the present study, the Q-sort rating technique (8) was adopted to give a single composite description of each individual's TAT hero. It was the task of E. to sort these 80 statements for each protocol into 9 piles approximating a normal distribution and ranging from those statements which were most characteristic of the TAT hero to those which were least characteristic. Since E. was the only rater in the research proper, a reliability study was necessary to show that other judges could sort the statements, from reading the TAT protocols, in a similar manner. This study, reported in more detail elsewhere

(6),¹ yielded an inter-rater reliability coefficient of .75. In addition, each S sorted these same statements for an ideal self.

The sample consisted of 48 white, male Ss—16 normals, 16 psychoneurotics, and 16 paranoid schizophrenics. The three groups were roughly equated as to age and education. The paranoid schizophrenic group consisted exclusively of hospitalized patients with a psychiatric diagnosis of paranoid schizophrenia at the time of testing. The neurotic group was composed of non-hospitalized Ss who were undergoing some form of psychotherapy. All but one member of this group were veterans of World War II who had received a "service-connected" diagnosis of psychoneurosis and all had an existing neurotic diagnosis at the time of testing. No one was included in this group if a previous diagnosis of psychosis had been made. The utilization of a group undergoing psychotherapy was considered feasible since, in all cases, the number and type of contacts were not sufficient to produce any marked change. At the time of examination, the Ss were deemed representative of a neurotic population. The normals were people who seemed to be functioning effectively socially and occupationally, who felt no serious maladjustment within themselves, and who had no history of psychiatric treatment.

RESULTS

Since the ideal self sort represents a

¹ This article also contains a complete listing of all the statements employed in the present study as well as a detailed account of the method used for rating each TAT protocol.

picture of qualities which an individual perceives as desirable, the relationship between TAT hero characteristics and the ideal self may be viewed as an indication of the positive or negative quality of the TAT hero. The correlations between TAT hero and ideal self were computed by means of the product-moment correlation formula suggested by Cronbach (1) for use when the scores of all persons have the same mean and variance as in the case of Q-sort data. The individual intercorrelations of each person in each of the three groups are presented in Table I along with the median intercorrelations of the three groups.

TABLE I—Correlations Between the Ideal Self Sort and the T.A.T. Sort for Each Subject in the Three Groups

S	N*	PN*	PS*
1.....	.69	.17	-.38
2.....	.47	.36	-.36
3.....	.15	-.32	.29
4.....	.36	.05	.04
5.....	.50	.12	-.02
6.....	.33	-.19	.02
7.....	.19	-.31	-.02
8.....	.39	-.06	.01
9.....	.33	-.03	.07
10.....	.48	.08	.06
11.....	-.05	-.12	.43
12.....	.27	-.19	.02
13.....	-.09	-.21	-.01
14.....	.43	.19	.24
15.....	-.12	-.03	-.20
16.....	.62	.06	-.11
Median.....	.375	-.03	.015

* N = Normal, PN = Psychoneurotic, PS = Paranoid Schizophrenic.

The significance values computed by means of the Wilcoxon "T" test (10) indicate that the ideal TAT correlations of the normal are significantly different (and higher) than those of the neurotics and paranoid schizophrenics at the .01 level of confidence, whereas no significant differences are in evidence between the two pathological groups. These results point to the fact that the characteristics of the TAT hero of the normals more close-

ly resemble the ideal self concept than in the other groups. ✓

These findings fail to indicate whether the observed differences are related to systematic differences between the groups in the ideal self concept or in the TAT.² An attempt was made, therefore, to examine TAT differences more closely. The significance of the differences between the means for each of the 80 items of the TAT sort was computed for each group compared with every other group. The observed number of significant items were compared with the number expected by chance using chi-square methodology and the results are summarized in Table II. These results indicate systematic differences, greater than chance expectancy, between the TAT hero characteristics of normals as compared to each of the pathological groups but no systematic differences between the TAT hero characteristics of the two pathological groups.³

TABLE II—Observed Number of Significant Items, Chi-Square Values, and P-Values for the T.A.T. Sort of Each Group Compared with Every Other Group at the .05 Level of Confidence

Groups	No. Significant Items	Chi-Square Values	P
N-PN.....	25	110.59	.01
N-PS.....	16	34.80	.01
PN-PS.....	5	.065	.80

A clearer picture of the nature of the differences between the groups

² Data presented elsewhere (4) indicates that no substantial differences exist in ideal self concept in the different groups. This finding is in essential agreement with other investigators (3, 9) utilizing different statements and populations and seems to suggest that the ideal self concept represents, in large measure, a cultural stereotype.

³ Since the comparison between the psychoneurotic and paranoid schizophrenic groups failed to reveal systematic differences, further comparison between these groups is omitted.

may be obtained from an examination of the significant items. These items are presented in Tables III through VI. Since a statement may be significant because it is *more* characteristic of the TAT hero in one group than in another, this does not necessarily imply that it is characteristic or not characteristic of the TAT hero in absolute terms. For this reason, Tables III through VI present the means of the significant items for the readers' reference. A mean of 4.0 represents "neutrality" whereas a higher mean tends to be more characteristic of the TAT hero and a lower mean less characteristic.

TABLE III—T.A.T. Sort Items Significantly More Characteristic of the Normals Than the Neurotics at the .05 Level of Confidence

Item No.	Mean		Item
	N	PN	
4.	5.7	4.4	capable
7.	6.5	4.0	gets very interested* in things
10.	5.0	3.5	has a good imagination
14.	2.5	1.4	gambles
47.	5.5	3.8	thinks about enjoyable things
51.	5.0	2.4	looks at the bright side of things
54.	5.5	4.3	daydreams a good deal
59.	5.1	3.0	obeys parents
75.	4.3	2.0	follows father's advice
76.	4.5	2.8	feels close to father
78.	5.5	3.9	respects father
79.	4.1	1.9	helped by father's guidance

Scanning Tables III through VI, it appears that the statements characteristic of the TAT hero in the normal group as compared to the two maladjusted groups tend to reflect positive qualities and attributes. To evaluate this quantitatively, we selected 23 "desirable" and 23 "undesirable" statements. "Desirable" statements were considered to be those in which the mean for this sorting in all three groups was 5.0 or greater. "Undesirable" statements were those with a mean of 3.0 or less for all three groups. An examination of the signifi-

TABLE IV—T.A.T. Sort Items Significantly More Characteristic of the Neurotics Than the Normals at the .05 Level of Confidence

Item No.	Mean		Item
	PN	N	
3.	5.0	2.9	discouraged over lack of success
23.	4.1	2.8	has been a disappointment to father in some respects
29.	5.1	2.3	becomes discouraged easily
31.	6.6	4.4	feels blue and downhearted
34.	4.9	3.1	displeased with home life in some respects
38.	5.9	4.1	upset by things which later seem unimportant
43.	4.3	2.2	feels bitter toward people
44.	3.3	1.6	tries to get even with people
57.	5.9	4.0	forced to do unenjoyable things
61.	4.6	2.1	often wronged by other people
62.	3.7	2.4	was punished by father
63.	3.9	2.8	was punished by mother
64.	3.9	2.5	has felt angry at father

TABLE V—T.A.T. Sort Items Significantly More Characteristic of the Normals Than the Paranoid Schizophrenics at the .05 Level of Confidence

Item No.	Mean		Item
	N	PS	
1.	5.9	3.9	ambitious
2.	6.1	3.8	works hard to achieve a desired goal
4.	5.7	3.9	capable
7.	6.5	4.9	gets very interested in things
36.	4.8	2.7	gets over disappointment quickly
47.	5.5	4.2	thinks about enjoyable things
48.	6.3	5.0	thinks how nice it would be to be a success
51.	5.0	2.9	looks at the bright side of things

cant statements in this light revealed that 10 desirable statements were more characteristic of normal TAT heroes than neurotic heroes; 11 desirable statements were more characteristic of normal TAT heroes than paranoid schizophrenic heroes; 10 undesirable

TABLE VI—T.A.T. Sort Items Significantly More Characteristic of the Paranoid Schizophrenics Than the Normals at the .05 Level of Confidence

Item No.	Mean		Item
	PS	N	
3.	5.2	2.9	discouraged over lack of success
9.	4.3	3.1	envies others
15.	4.9	3.9	stubborn
29.	5.4	2.3	becomes discouraged easily
37.	5.8	4.5	sometimes feels like crying
43.	4.2	2.2	feels bitter toward people
62.	3.4	2.4	was punished by father
63.	3.6	2.8	was punished by mother

items characterized neurotic heroes as compared to the normal; and 8 undesirable items characterized the paranoid schizophrenic heroes as compared to the normal. No desirable statements were significantly more characteristic of the TAT heroes of the two maladjusted groups, when compared with the normal group, and no undesirable statements were significantly more characteristic of normal TAT heroes than of neurotic and paranoid schizophrenic heroes. These results clearly reveal the relatively more positive nature of the TAT hero in a normal group as compared to neurotic and paranoid schizophrenic groups. In particular, it appears that the TAT hero characteristics of the normals reflect greater feelings of adequacy, satisfaction, and optimism about life, as well as a less stressful relationship with people and parents. On the other hand, the TAT hero characteristics of the psychoneurotics and, somewhat less strikingly, of the paranoid schizophrenics, are marked by stronger depressive qualities, less satisfaction with life, and more strained relationships with people and with parents.

A final issue to be considered is the question of homogeneity. In any group comparison research it is helpful to know how much alike are the members of one group and how much

different they are from members of another group. Toward this end, within and between groups correlations were obtained by the method of group correlation suggested by Cronbach (1). The results are summarized in Table VII.

TABLE VII—Within and Between Groups Correlation for the T.A.T. Sort

N	Within	PS
	PN	
.261	.245	.119
N-PN	Between	PN-PS
	N-PS	
.114	.110	.154

While none of the correlations in Table VII is exceptionally high, it should be pointed out that the absolute size of correlations based upon a Q-technique study is not interpretable in the same way as any of the traditional correlation coefficients (2). The important aspect is the relative magnitude of these correlations. From Table VII it may be observed that the mean within groups correlations of both the normal and neurotic groups are appreciably higher than that of the paranoid schizophrenic group, revealing the greater variability of the paranoid schizophrenic group in their characterization of the TAT hero. The higher correlation between the neurotic and paranoid schizophrenic groups suggest a greater similarity between these two groups and a greater relative dissimilarity to the normal on the TAT.

To verify these observed trends, within and between groups correlations were compared for statistical significance by the Wilcoxon Matched Pairs Signed Ranks Test (10). The results are summarized in Table VIII and indicate the relative heterogeneity of the paranoid schizophrenic TAT.

SUMMARY

An 80 statement Q-sort was used to

characterize the TAT hero of each subject who, in addition, sorted these same 80 statements for his ideal self-concept. The sample consisted of white, male Ss—16 normals, 16 non-hospitalized psychoneurotics, and 16 hospitalized paranoid schizophrenics.

The findings of the present study may be summarized as follows:

1) The TAT hero of the normal correlates with the ideal self concept to a significantly greater degree than the TAT hero of a psychoneurotic and

normal and psychoneurotic TAT hero were sufficiently homogeneous to achieve statistical significance whereas the paranoid schizophrenic TAT hero proved most variable and relatively heterogeneous.

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TABLE VIII—Significance Values for the Within and Between Groups Comparisons for the T.A.T. Sort

Within Group	Between Groups	P	P/2
N	N-PN	.05	.025
N	N-PS	.10	.05
PN	PN-N	.10	.05
PN	PN-PS	.07	.035
PS	PS-N	.33	.165
PS	PS-PN	.21	.105

paranoid schizophrenic population.

2) The normal TAT hero is significantly different from the TAT hero of the psychoneurotic and paranoid schizophrenic groups whereas the two maladjusted groups do not differ significantly from one another.

3) The TAT hero of the normal reflects greater feelings of adequacy, satisfaction, and optimism about life, as well as a less stressful relationship with people and parents, and less depressive qualities when compared with the TAT hero of neurotic and paranoid schizophrenic Ss.

4) While the TAT hero in all groups revealed variability, both the

The Effects of Warm and Cold Interaction on the Interpretation of a Projective Protocol¹

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An increasingly important area of research in the use of projective techniques concerns the influence of the examiner-subject interaction on the results of the diagnostic interview. Clinicians are now aware that testing involves a relationship between two people, neither of whom are standardized or constant. The awareness of the importance of the interaction, however, has not as yet led to any appreciable body of unequivocal research results. Klopfer et al, for example, state that "any holistic interpretative procedure should take account of the subject-examiner relationship as just as much part of the total context as the stimulus material itself. However, the influence of this aspect of the test situation has been inadequately explored" (8, p. 349).

What experimental evidence there is relating to this problem is contradictory. Various investigators (1, 3, 4, 5, 10, 13) have found that Rorschach examiners differ from each other in the kinds of responses given by their subjects. Other findings, however, (2, 7) indicate that differences in examiners do not produce significantly different responses in subjects. The research is not only contradictory, but much of it is subject to serious methodological criticism, as Levy (9) and Hammond (6) have indicated.

The research in this area has focused on the influence of the examiner on the behavior of the subject. There has been no experimental work on the influence of the subject on the examiner's behavior. Yet as Schafer (14) has suggested the testing situation is characterized by the mutual interplay of examiner and subject expectations, wishes and needs. The present study was designed in an attempt to investigate the examiner's behavior as it was influenced by the subject. The method that was employed was the use of accomplices, posing as test subjects, who assumed warm and cold roles toward the examiner.

The specific hypotheses which were investigated were as follows:

- I. When an examiner tests several subjects he will make more positive statements about the subjects who like him than those who do not.
- II. When a subject acts interested in an examiner more positive statements will be made about him than when he acts disinterested.

METHOD

The examiners in this study were the eight graduate students in the author's seminar in projective techniques. Three of the students had used projective tests previously, but this had been the first formal course in the area for all of them. The experiment was introduced during the last month of the semester, by which time each student had received supervision in administering and interpreting seven TAT's and several Incomplete Sentence protocols.

They were told that Dr. Rotter, the author of the Rotter Incomplete Sen-

¹ The author is greatly indebted to the members of his class who served as examiners: Herbert Dandes, Everett Gertner, Marie Gill, John Hertzberg, Calvin Mosher, Arthur Schatz, David Sine and June Tapp. The success of the study was due to the ability of Carol Baker and Jane Nolan to act so convincingly as the accomplices. The statistical procedures used were discussed with Dr. Jerome Schiller and Dr. Norman Wallen. The judges were Dr. Bernard Braen, Dr. Jerome Schiller, Mr. Morton Silverman and Dr. Matthew Trippe.

tence Test, was engaged in a nationwide effort to gather information regarding the manner in which his test was used in various installations and clinics. They were also told that Rotter wished to develop better norms for his test, using all varieties of subjects. This being the case, they were asked not to communicate with each other regarding the subjects they saw or the manner in which they interpreted the case. A copy of their reports would be sent to Dr. Rotter, they were told. The class accepted this explanation without question, all eight students agreeing to participate in the study.

The test subjects were two "accomplices", both attractive undergraduate girls who volunteered to take part in the experiment as part of the requirement of their introductory psychology course. Both accomplices were given practice in assuming warm and cold roles toward the examiner. In the warm role the accomplice was told to act friendly and interested in both the testing situation and the examiner, the goal being to make him feel comfortable and accepted. In the cold role she was to act in a formal, disinterested way and her object was to make him feel awkward and incompetent. The accomplices were warned that the examiners were relatively sophisticated in assessing other people, and they were urged not to "ham it up."

Two Incomplete Sentence protocols were prepared by using the examples given in the Rotter-Rafferty Manual (12). Each accomplice was given one protocol to memorize and they were both warned of the necessity of presenting the same responses to each examiner. An analysis of the protocols showed that each accomplice did, in fact, respond identically to the eight examiners. In writing the two fictitious protocols, the aim was to give this material an over-all neutral quality, so that it would not appear to the examiner to be either an obviously healthy or sick record. To achieve this goal, there were equal numbers of

very sick and very healthy responses selected, mildly sick and mildly healthy responses, etc. Each protocol contained two sentence endings that would be given a score of six in Rotter's system ("I feel . . . depressed at times") and two endings that would be scored zero ("The best . . . time is right now"); four responses that would be scored five ("I am best when . . . I know that people approve of me") and an equal number that would be scored one ("At bedtime . . . I fall right to sleep"); eight responses that would be scored four ("My greatest fear . . . is of cancer") and eight that would be scored two ("The happiest time . . . will be when I get married"); and twelve neutral endings that would be given a score of three ("Back home . . . In Indiana"). Each protocol, therefore, while containing different stem endings, had a mean conflict score of three, the neutral category. For the purpose of this study, the protocols were considered alternate forms.

Each examiner saw each accomplice in an individual session. By a pre-arranged schedule, one accomplice would be warm to a particular examiner, while the other would be cold. Each examiner, therefore, interacted with a cold subject and a warm subject. To counter balance any possible effects of the protocols used, each accomplice had an equal number of cold and warm roles. In responding to the sentence stems, the accomplices were instructed to answer in a non-rehearsed manner and to skip some of the stems the first time they were encountered but to answer them later.

For the most part the accomplices were able to convey the impression that their responses were genuine and not faked. Unfortunately, part way through the study one of the examiners saw an accomplice whom he had already tested go into the testing room with another examiner. He communicated this to the second examiner and ultimately a third examiner was informed that some of them were see-

ing the same subjects. In addition, two of these examiners learned that some of the sentence endings were identical in their protocols. The author was informed that rumors were being circulated regarding the reason for the study and at the end of the experiment, but before the purpose of it was revealed to the class, he requested the examiners to enumerate the facts and theories they had regarding the experiment. One S (Examiner B) believed completely the reasons for the study that the author gave in class, another (Examiner D) became suspicious of the rapid manner in which one of the accomplices had responded to the stems but had no information or theory concerning the nature of the study, and three S's (Examiners C, E and H) were not aware that the protocols were faked but had private thoughts regarding the interest the instructor had in the examiner as a variable in projective testing. The three S's (Examiners A, F and G) who had learned something about the use of accomplices concluded that the author was interested in determining the reliability of interpretation of a projective protocol. Thus, none of the S's had anticipated the purpose of the study, even though six of them were convinced that they were the real subjects, rather than the examinees. However, since none of them knew which aspect of their behavior was of interest to the author it may be assumed that their interpretations were written independently of any knowledge of the specific hypotheses of the study.

Each of the 16 interpretations was divided into thought units by the author. Any sentence, or part of it, which expressed a new idea was considered to be a separate unit. Enumerations and synonyms ("She is insecure and anxious") were considered single units. There was a total of 711 units in the 16 protocols, with a range of 20 to 79 per protocol, a mean of 44 and a median of 39. After each interpretation had been separated into units, all references to the examiner-

subject interaction were removed, the names of the examiner and subject were coded, and judges were asked to determine for each unit whether the examiner was making a "positive", "negative" or "other" statement about the subject.

Positive statements were defined as indicating one or more of the following characteristics about the subject: she is in good psychological health; she is moving in the direction of good psychological health; she has insight into her problems; she has made an investment in some activity or interest; she is motivated to relate well to others. Negative statements were defined as the obverse of the above characteristics (poor health, lack of insight, etc.). Other statements were those that could not be classified along the positive-negative dimension ("She is a fine arts major"). The judges were given practice in the scoring of practice units, after which each judge independently scored the 16 protocols. The first two judges who attempted this were not given sufficient practice and confused the phenomenological approach, which the instructions called for, with the more usual depth, or clinical, approach. As a result, two new judges were selected, the training period was lengthened and the instructions were clarified. After the independent judging of the protocols, the judges discussed the 133 units where they had differed until they could both agree on a rating. Since the author was aware of the identification of each protocol, he did none of the judging and he did not attempt to influence the judges in their ratings.

RESULTS

The two judges independently agreed on the categorization of 578 of the 711 units, an agreement of 81%. When the protocols were placed in rank order in terms of percent agreement, the range of agreement was from 59% to 96%, with a mean and median of 77%.

After both judges had agreed on a

TABLE I. The Number and Percentage of Positive, Negative and Other Statements by Examiner, Accomplice and Condition

Examiner	Accomplice 1			Accomplice 2		
	Warm		Cold	Warm		Cold
A	Pos. 25 (36%) Neg. 38 (55%) Other 6 (9%) Pos/Neg .66					Pos. 20 (29%) Neg. 43 (61%) Other 7 (10%) Pos/Neg .48
B			Pos. 22 (28%) Neg. 51 (65%) Other 6 (7%) Pos/Neg .43	Pos. 40 (67%) Neg. 16 (27%) Other 4 (6%) Pos/Neg 2.48		
C			Pos. 18 (49%) Neg. 11 (30%) Other 8 (21%) Pos/Neg 1.63	Pos. 23 (66%) Neg. 9 (26%) Other 3 (8%) Pos/Neg 2.54		
D	Pos. 16 (35%) Neg. 21 (57%) Other 4 (8%) Pos/Neg .61					Pos. 9 (41%) Neg. 12 (55%) Other 1 (4%) Pos/Neg .75
E			Pos. 9 (28%) Neg. 21 (66%) Other 2 (6%) Pos/Neg .42	Pos. 15 (63%) Neg. 7 (29%) Other 2 (8%) Pos/Neg 2.17		
F	Pos. 5 (20%) Neg. 16 (64%) Other 4 (16%) Pos/Neg .31					Pos. 5 (17%) Neg. 14 (48%) Other 10 (35%) Pos/Neg .35
G			Pos. 5 (25%) Neg. 12 (60%) Other 3 (15%) Pos/Neg .42	Pos. 17 (41%) Neg. 17 (41%) Other 7 (18%) Pos/Neg 1.00		
H	Pos. 15 (25%) Neg. 36 (59%) Other 10 (16%) Pos/Neg .42					Pos. 8 (13%) Neg. 47 (77%) Other 6 (10%) Pos/Neg .17

single rating for each unit, the number of positive, negative and other ratings for each protocol was determined. In addition, the ratio of the number of positive ratings to the number of negative ratings for each protocol was computed. A ratio greater than 1.00 indicates more positive units than negative, while a ratio less than 1.00 indicates more negative units than positive. Table I presents the number of positive, negative and other units and the ratio of positive to negative units by examiner, condition and accomplice.

Following the suggestion of Siegel (15), Hypothesis I was tested by the use of the Wilcoxon matched-pairs signed-ranks test, a non-parametric statistic taking into account both the

direction and magnitude of differences. The data used to test this hypothesis were the comparisons of the positive/negative ratios between the warm and cold conditions. An inspection of Table I revealed that only in the protocols of Examiners D and F were the ratios higher for the cold condition than the warm, the magnitude of these differences being the lowest and second lowest among the eight pairs of comparisons. This result would have occurred by chance alone between one and two and a half times in 100, using one-tailed probability values. It is evident, then, that the present examiners made more positive statements about a warm subject than a cold one.

Hypothesis II was tested by assum-

ing that the test behavior and protocol of Accomplice 2 could be considered an alternate form of Accomplice 1. The 16 ratios of positive to negative statements were ranked and divided at the median (.485) and an analysis made to determine how frequently the warm condition produced a ratio larger than the median as contrasted with the frequency with which the cold condition produced a ratio larger than the median. It was found that in the eight warm conditions, six ratios were higher, and two lower, than the median, while in the eight cold conditions, two ratios were higher, and six lower, than the median. A standard error of the difference between proportions yielded a critical ratio of 2.00, significant at the .025 level, using one-tailed probability values. It may be concluded, therefore, that when the present subjects acted warm to an examiner, more positive statements were made about them than when they acted cold.

DISCUSSION

The results of this study indicate that the interpretation of a projective protocol is in part a function of the subject-examiner relationship. The examiners used in this experiment could not separate the meaning of their interactions with the subjects from the interpretation of the protocol. Even more impressive than the quantitative analysis of the interpretations were the qualitative differences in the descriptions of the subjects. For example Examiner C had this to say about Accomplice 2, who interacted with him in a warm manner: "She feels part of her family group . . . enjoys school very much . . . seems to be very conscientious and recognizes deficiencies within herself which she is trying to remedy . . . positively oriented toward the future . . . sensitive, introspective . . . likes people". Describing the *same* accomplice and the *same* protocol, but having experienced a cold interaction, Examiner A wrote: "She has little insight or definition of

her problems . . . frequently expresses considerable tension . . . goes on crying jags and feels sorry for herself . . . feels depressed . . . compulsively sets exacting standards for herself . . . lack of sympathy for others . . . uncomfortable in strongly affective situations and solves her problems by ignoring them and denying their existence."

It is apparent that these two examiners were responding to different stimuli. The protocol itself is only part of the material which the psychologist has to assemble and give meaning to; the manner in which the responses are given, and more importantly, the feelings which the interaction arouses in the examiner, obviously help determine interpretive behavior as well.

Because the protocol is such an ambiguous and unstructured stimulus, it may serve as a projective device for the examiner, as Hammer and Piotrowski (5) have indicated. In a setting as ambiguous and unstructured as an interview, a psychotherapeutic session or a testing situation, the psychologist must often rely heavily on cues which have no easily located referent. Previous research has shown that both the interviewer (11) and the subject (17) respond to interpersonal cues of which they are unaware. In the present experiment the examiner's judgment was influenced without his awareness or control. The author did notice, however, that the students who had done the best work in his class were very sensitive to the attitudes of the subjects while the two examiners whose reports were biased in favor of the cold accomplice were the least skilled. (In view of the results of this study, it is entirely possible that the author's evaluation of his students' performance is in some measure a function of the warmth of their interaction with him, their appreciation of his small jokes, or the extent to which they provided interpretations supporting the hypotheses of this experiment.)

The present study is characterized by several weaknesses. The small number of examiners and the use of only two accomplices makes it unwise to generalize the findings to larger populations of psychologists and subjects. All that can be concluded is that using these particular subjects the hypotheses were substantiated quantitatively and qualitatively. A second weakness concerns the use of relatively inexperienced graduate students as examiners. It is interesting to speculate on the results that would have been obtained had the examiners been thoroughly experienced and sophisticated in diagnostic procedures. Pertinent to this question is the conclusion of Stanton and Baker (16) that the bias of the interviewer affected interviewer responses even with experienced interviewers who were aware of their bias and who were dealing with objective material. The third limitation in this study concerns the fact that three of the examiners knew they were testing the same subjects. It is interesting to note that of the two examiners whose interpretations ran counter to the hypotheses, one came from this group. Evidently, knowledge of the use of accomplices did not produce in these three examiners any greater tendency to write interpretations supporting the hypotheses than in the other five examiners. While the effect of this leak in information cannot be determined with any precision, it certainly weakens the confidence one can place in the findings.

SUMMARY

1. The author arranged appointments for the eight members of his class in projective techniques to administer and interpret two Rotter Incomplete Sentence Tests. The examiners were not aware that the test subjects were accomplices, each of whom responded with faked, memorized stem endings. These protocols were constructed so that they could be considered alternate forms. Every examiner saw one accomplice who acted

warm and another who acted cold and each accomplice had an equal number of warm and cold roles. The interpretations which the examiners made of the protocols were analyzed for the number of positive, negative and other statements.

2. Two judges agreed 81% in classifying responses as positive, negative or other, while the mean and median agreement per protocol was 77%.

3. The data indicated: (a) when an examiner tested two subjects he made more positive statements about the one who liked him than about the one who did not; and (b) when subjects were warm to the examiner they were perceived more positively than when they were cold.

4. Several weaknesses of this study were discussed.

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A Note on the Use of the Schizophrenic in Rorschach Content Analysis

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INTRODUCTION

Rorschach content interpretation is freely practiced in clinical work today; however, Rorschach's original disparagement has retarded development of a dynamic theory of content analysis. The usual approach employed by psychologists is the highly subjective procedure of free associating to the patient's responses to arrive at their meaning. Some clinicians compensate for their felt inadequacies through the assignment of invariant meanings to specific images without reference to individual differences, much as they might rely upon universal symbolism in dream interpretation. Lindner (4), a leading exponent of this extreme view, correlated single, specific responses with major pathological trends and diagnostic categories. Other authorities, such as Shaffer (9), have reacted strongly against this inflexibility of interpretation, advocating a thematic analysis of content, in much the same sense as applied to TAT stories, but cautioning that interpretations are only hypotheses and remain in need of careful internal and external validation.

The difficulty encountered in the scientific investigation of the unconscious and symbolic aspects of human behavior has further limited research in this area. Psychoanalytic theory suggests a novel avenue of approach through the occasional, fascinating and informative schizophrenic who retains the ability and willingness to introspect for the interested clinician. Fenichel (2,p.422) aptly represents the psychoanalytic viewpoint in his statement that because the "unconscious has become conscious", the psychotic is dominated by archaic modes of thinking. "The schizophrenic shows

an intuitive understanding of symbolism. Interpretation of symbols, for instance, which neurotics find so difficult to accept in analysis, are made spontaneously and as a matter of course by the schizophrenic." He often expresses ideas which are deeply repressed in others; that is, the expressed thoughts of the schizophrenic may be similar to the unconscious thought of the normal or neurotic. Symbolic thinking for them is not merely a method of defensive distortion; it is an archaic pictorial type of thinking that occurs in all regressive states, such as fatigue, illness, sleep and psychosis. Many psychoanalysts are known to conclude that any patient who could correctly interpret his own dreams was schizophrenic. Brill (1) states, for example, that he never found a patient not schizophrenic who could interpret his own symbols correctly. Rosen (8) thinks enough of the schizophrenics' facility in understanding psychotic behavior and verbalizations that he has employed patients-in-remission to advise him in treating severely disturbed psychotics. He literally equates schizophrenia with dreaming and sees the problem of treatment as that of waking the patient from his nightmare.

PROCEDURE

Schizophrenic patients were employed to interpret the very private, individualistic, fleeting, mutable symbols frequently represented in Rorschach responses. Over a period of two years, approximately 50 schizophrenic patients were informally screened for participation in this study, and three were selected on the basis of their willingness and demonstrated ability to cooperate in the interpretation of a

variety of symbolic content. Each manifested behavior suggestive of an intimate acquaintance with symbolic modes of thinking, though care was exercised that they had received no formal training, including psychotherapy, in the interpretation of symbolic phenomena. Their prior familiarity with the Rorschach method of personality appraisal was limited to having taken this test upon admission to the hospital. Patient A was brought to the attention of the author by his elaborate, detailed religious-symbolic paintings in occupational therapy. Patient B suggested himself as a subject when he volunteered interpretation of another schizophrenic's autistic ward behavior. The third patient, Subject C, was included when he spontaneously interpreted the symbolic meaning of his own responses during the administration of a Rorschach.

Each subject was given the same five Rorschachs for interpretation; all protocols were obtained from young male subjects, three from schizophrenics, one from a hospitalized neurotic, and one from a "normal" college student. The validating criteria consisted of a case summary consolidated from an intensive psychiatric, psychologic, and social service evaluation, and the cross validation provided by the three interpretations of each Rorschach. The study concerned only the interpretation of content, divorced from other aspects of the response, such as location or determinants. The method of "blind analysis" was partially adhered to, in that only the sex and age of the Rorschach respondents were provided.

RESULTS

Results obtained from the three patients were highly encouraging; the patients associated freely and made interpretations of symbolic content with an attitude of considerable self-assurance. The apparent ability of these untrained subjects to arrive independently at similar interpretations derived from Rorschach content an-

alysis is illustrated by the following example:

Rorschach protocol (IV) presented to the patient-subjects:

Card:

- I 1. A bat.
2. A dried leaf, disintegrating or rotting.
- II I never saw or thought anything like this.
1. Blood, perhaps. I certainly don't see anything there. Could be a picture of a pelvis bone with blood on it. But blood is in the wrong spot; should be in the middle or no blood at all. I was a pharmacist's mate in the Navy.
- III 1. Looks like autumn to me, dried leaves again. Two colors, brown, and red. It really doesn't look like anything.
- IV I don't get anything out of that one.
1. Could be a turtle under water. Looks encrusted.
- V 1. Could be a bat.
- VI 1. Looks like a bone, a hip bone, but it's way out of shape.
- VII It's like nothing I ever saw.
- VIII 1. Looks like two moles, the two pink items, crawling over some rocks. Like at the zoo. Could I read the back, doctor?
- IX 1. (Slants card). Like coal put in water in the wintertime. But doesn't really look like it.
- X 1. Tree stump.
2. Young tree, a sprig, ready to be stuck in the ground. Possibly a book print or magazine illustration.

Verbatim recorded interpretation of Patient B:

- I 1. An attempt at flight or escape from the test.
2. The tree is a symbol of life. Every leaf gets its vitality from the tree and is dependent on it. The tree could be his family or society. This is an individual member that has fallen off into a mental institution. He feels he is rotting in the hospital, isolated from others.
- II 1. He begins by denying what is to follow. He tries again at the end to deny its importance by saying he was a pharmacist's mate. It is clear that this is the pelvic bone of a

female, since he says the blood should be in the middle. He is possibly preoccupied with obscene sex thoughts.

III 1. Autumn and leaves? Autumn is in the fall, that is, late in life. Dried leaves again indicates loss of life. He is saying, "It is late in life for this to happen to me. My life is wasting away."

IV 1. Underwater means death. Deep water means danger or trouble. He is a guarded creature, living in hidden depths. The turtle is a cautious animal who finds security in its shell and underwater, hidden away. 'Encrusted' means being weighted down with anxiety or trouble. He has been like this for a very long time.

V 1. Another guarded response.

VI 1. Repetitious. His concern with hips shows an interest in sex. As on the second card, there is something wrong, that is, the blood in the wrong spot or the hip bone is misshapen. He may have a problem about homosexuality.

VII The card represents some great danger—it is too close to his 'trouble area.' Maybe this is a carryover from the last card. Sex is definitely a problem to him.

VIII 1. Moles are underground creatures. One quality is destructiveness and another is living in eternal darkness. This is like the turtle response. This person is underground, living within himself, hidden away from others. His request to read the back of the card indicates suspiciousness of the purpose of the cards. He fears being trapped by his responses and wants to stop the testing.

IX Slanting the card is an attempt to 'look into the picture,' that is, to get under the most prominent features of the card. It is another sign of fearfulness.

1. Coal is a symbol of life; it gives off energy and warmth. The source of warmth or life for this person has been extinguished. He is without love when it is needed most, that is, in the wintertime. There is an absence of life or love in all his remarks.

X 1. A tree stump is again something dead.

2. The sprig means a person about to be born. It is different from his

other remarks that it may mean a fear of being born out of safety into a threatening situation. Is he a hospital patient that is about to be discharged? See how he comes back and makes it into a print, removing it from real life?

Patient B's summary comments: This is a very sick person, but I could not say he was insane. I don't know. He is fearful, suspicious, guarded, lonely, sees himself as decaying or losing ground. He has many difficulties and burdens. He is very concerned about sex. Does he prefer other men or little girls? He is very withdrawn introverted, sees himself as actively burrowing, but I don't know whether he is going in or out, probably the first. He needs love very much but it is denied him for some reason and he feels lifeless and depressed.

Summary interpretation of the same Rorschach by Subject C:

This person has serious problems. He is very morbid, depressed, worries about life and death. He seems angry. Has he killed someone, a woman? Or does he want to be one? (Subject's interpretation of Card II: I think he means this is a female pelvis because the blood is misplaced. Does he enjoy hurting women? Or does he want to make himself into a woman?) I get the feeling that he is careful about what he says. He sees things he doesn't want to tell, but has to say something because he knows the doctor expects it. He is avoiding something that is very disagreeable; sex or violence, maybe both? The bat, turtle, and mole all have the same meaning: they are distasteful animals that hide themselves (in the night, water, earth). This person needs to hide himself from others. The last card shows his fear of death and the hope that he may live or grow again when things are better.

Comprehensive (summary) evaluation of the Rorschach respondent:

The patient, aged 31, diagnosed as "Schizophrenia, Paranoid type", has

been hospitalized intermittently the past five years. He is superficially pleasant and cooperative; however, he makes extensive employment of the defenses of repression, suppression, denial and projection.

His childhood was reportedly normal and uneventful except for a tendency toward seclusion. The first overt psychotic behavior appeared in the Navy. He makes insistent claim that an admiral made homosexual advances to him, which he rejected. In retaliation, the officer supposedly persecuted him during the remainder of his enlistment. The patient's marriage in 1948 apparently precipitated a homosexual panic, and shortly thereafter, he became acutely suspicious, fearful of being watched and harmed, and was hospitalized. While he was divorced in 1951, he nevertheless continues to blame his wife for all his present difficulties.

There is evidence of a rigid, crystallized delusional system. He believes his wife instigated his persecution by the Mafia and that this is perpetuated by his threat to expose the activities of this society. Personal difficulties are completely denied, hospitalization is perceived as imprisonment, and interviews as a form of interrogation. Hospital personnel are included as members of the persecutory pseudocommunity. For instance, he asserts that the ward physician is a member of the Mafia and each night administers "brain washings" while he sleeps. As evidence, he shows the "needle marks" on his body. He further believes that the hospital maintains unrelenting pressure in an attempt to cause his physical and mental deterioration. As is characteristic of many chronic psychotics, however, he has learned to avoid verbalizing his delusions. His outward conformance and submissiveness result from his conviction that present resistance is futile, and he has resigned himself to "taking it" until discharged.

Tenuous control over lightly sup-

pressed, intense hostile and deviant sexual impulses is reinforced by his voluntary withdrawal from all interpersonal contacts, which he rationalizes as a protection of others, since father supposedly lost his job for trying to help him. This fear of contaminating others provides him with a convenient excuse for living away from his anxiety-arousing, controlling parents.

Aside from occasional episodes of verbal hostility, including remarks about the homosexual tendencies of other patients, the patient makes an adequate hospital adjustment. However, confrontation with any of the discrepant aspects of his delusional system or reports on irrational past behavior easily disequilibrate him and often result in heated counter-accusations. It is extremely doubtful if he can ever achieve other than a temporary marginal adjustment outside the hospital; especially since his defensive system will not allow him to accept sympathetic support and guidance. It is anticipated that the patient will someday require permanent commitment.

These are typical examples of the interpretive ability of the schizophrenic subjects, the degree of agreement between interpretations and between these interpretations and the case summaries. However, before clinicians scurry to hire schizophrenic consultants to aide them in Rorschach content analysis, they should be aware of two additional results. First, the subjects did not display equal facility in interpreting all Rorschachs, and second, there was definite evidence of personal projection in their interpretations.

An extensive psychological evaluation was available on each subject. When the five interpretations of any one subject were compared, they revealed clearly discernable trends consistent with their own dynamic structure. Patient A, for example, frequently found evidence of intense religious conflicts; patient B constant-

ly projected his own problems of homosexuality, including a preference for young girls; patient C, a convicted murderer, found many indications of homicidal impulses. That the subjects also displayed somewhat greater ability to interpret the protocols of schizophrenic patients than they did those of the neurotic or normal, seems partly attributable to a coincidental correspondence in the schizophrenic dynamics of the subjects and the patients whose Rorschachs they were asked to interpret. In addition, the possibility suggested itself from the data that the perceptual structuring of better adjusted individuals will be relatively impersonal, highly determined by the objective characteristics of the blots, and conflict-free, while the percepts of schizophrenics are more determined by impulses, defenses and conflicts. Records of this latter type appear to generally provide greater opportunity for interpretive elaboration in content analysis.

DISCUSSION

There is suggestive evidence that some schizophrenics have a sensitive intuitive ability to understand unconscious imagery as projected in Rorschach responses, although the contribution of their projective mechanism must be carefully appraised. While primary interest here is in a novel technique for evaluating Rorschach content analysis, it is inevitable that the focus of discussion return to the nature of the schizophrenic thought processes. It is highly doubtful that the ability to interpret symbolism is specifically correlated with this disorder, since only three of fifty schizophrenics interviewed displayed this talent. There is evidence in the literature that some normal, psychologically unsophisticated hypnotic subjects who show no facility in handling symbolic content in the waking state are able to dream upon command or to interpret symbolism (5, 7). Freud (3, p.333), himself, believed that the presence of

schizophrenia facilitates symbolic interpretation but in later life concluded: "The progressive experience of psychoanalysis has enabled us to discover patients who have displayed in a surprising degree this immediate understanding of dream symbolism. Many of these patients suffered from dementia praecox, so that for a time there was an inclination to suspect that all dreamers with such an understanding of symbols were suffering from that disorder. But this did not prove to be the case; it is simply a question of a personal gift or idiosyncrasy without perceptible pathological significance." However, from a theoretical point of view, it is not surprising that the schizophrenic should have especial abilities in this area.

Schizophrenia is characterized by difficulties in communication; the schizophrenic lives in a symbolic world not shared to an appreciable degree by society. He has unusual difficulty in using shared, common, fixed, social symbols; instead, anxiety forces a system of logic that enables him to reason to acceptable, non-threatening conclusions. This logic involves the basic principle elaborated by Don Doramus (10), and is in essence the false perception of identity based on irrelevant (predicate) attributes.

Thus the schizophrenic is bound to present experience, thinking and acting are directed by the immediate claims made by one particular aspect of the object or situation, as determined by intensely emotionalized attitudes. According to the specific way in which a certain object or situation is experienced, a restricted property or aspect becomes the basis for his choice of symbols. This is possibly the mode of schizophrenic thinking that contributes both to his difficulties in social communication and to his facility in understanding autistic symbolization.

The propensity for this mode of idiosyncratic thinking of the patient-

subjects was nicely demonstrated on Peters' (6) Word Meaning Test, a measure of abstract thinking. The subject is presented with a list of 30 stimulus words, each paired with four other words: One is subordinate, another supraordinate, and the other two are generally considered irrelevant. The subject is asked to identify which of the four "goes with" the single word. To illustrate:

Car:

Regimentation
Buick
Paper
Transportation

Shark:

World
Search
Man-eating
Animal

Month:

January
Finger
Johnson
Time

On this test the three subjects displayed a discernable tendency to associate logically irrelevant words;¹ for instance, Subject B paired Shark-World, Month-Finger, Car-Regimentation. Subsequent inquiry revealed that he perceived the world as full of people who, like sharks, are dangerous; he pictured a finger pointing at a calendar; he resents social regimentation and cars are one method by which this is achieved. However, when asked to choose the associations used by the "average person", the three subjects were quite capable of responding in the conventional manner. Thus the schizophrenic is not invariably committed on this type of logic although its use has defensive

value when a high degree of threat is involved.²

SUMMARY

Psychoanalytic theory posits that because of a breakdown of repression and the employment of archaic modes of thinking, the schizophrenic has especial faculty in understanding symbolic phenomena. A limited sample obviously restricts the conclusions that can be drawn from this exploratory study; nevertheless, it was found that in the absence of formal psychological training at least some schizophrenics have the ability to intuit personality dynamics manifested in Rorschach percepts. These results suggest an additional approach to the difficult problem of investigating the increasingly employed procedure of Rorschach content analysis.

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¹ While the subjects were distinguishable from a normal control group on this basis, many of the schizophrenics tested who displayed no special facility in symbolic interpretation also responded with idiosyncratic associations. The identifying characteristics of schizophrenics who show this ability remains to be determined.

² This manner of reasoning is demonstrated by the situation in which Patient A once suggested that a diet of distilled water, refined food, and pure oxygen might be the cure for schizophrenia since the energy saved in the digestive process could be used to combat the illness. A mild objection by one of the staff was taken as confirmatory evidence by the patient on the ground that if the suggestion sounded "crazy" to a normal person and since insanity was a form of irrationality, then the remedy must be an illogical one.

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Overt and Covert Recording

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Gill, Newman, and Redlich (2) report that initial interview data were distorted and considerably abbreviated when recording was done by notes and from memory. Inasmuch as Thematic Apperception Test data may produce many thousands of words, depending upon the number of cards used, adequate recording of this test may become a problem of some concern. In the present age of electronics however, this problem is easily solved by the use of a recorder. This however raises another problem, for the presence of a microphone may by "mike fright" inhibit the production of useful material by the S or even be objected to by the tester—this latter is a facet of the problem which is often overlooked.² If it should be thought that the presence of the microphone may disturb the S and hence his productivity, the recording apparatus as well as the microphone may be concealed. At this point however, a hue and cry are raised that such a procedure is "unethical." In this connection Marcuse (3) states: "The very dynamics of the therapeutic situation involves the attempt to circumvent the patient's resistance and to wrest the meaning of the symptom from him. In this sense then all therapy is covert. To say that the procedure of covert recording which may

help the patient is unethical, can only stem from a failure to recognize the dynamics of therapy." Distorted logic over "secret" recording has obscured beyond recognition the real issues involved—a point which Amrine and Sanford (1) have clearly indicated. In effect misuse is not a satisfactory reason for disuse. For purposes of this study the viewpoint of the American Psychological Association (7) is relevant: "Psychologists agree that clinical interviews, case records, and other aspects of diagnostic or therapeutic work should be kept confidential. They also endorse the general proposition that the client has the right to know the circumstances attendant on the conduct of the interviews. *However, specific decisions made in the interest of training, research, or some other laudable purposes are sometimes made in violation of these general agreements.*" (Section 2.31) (Italics the authors.)

Is it known whether overt recording actually does inhibit productivity? West (6) conducted a study in which he compared responses of 60 Ss in overt and covert situations. He found no significant differences in such indices as: number of words, reaction time, and clinical significance. However 15 per cent of his Ss, in their required phenomenological reports, did express discomfort at being overtly recorded. A possible explanation of his not finding significant results in certain of the indices is that his Ss were relatively well-adjusted and non-anxious individuals who were not influenced by the pressure of the presence of a microphone. It was the question of the role of anxiety in recording that prompted the present study.

¹ This study was done in partial fulfillment of the requirements for the degree of Master of Science in Psychology at the State College of Washington. The scope of the study was made possible thanks to Grant 3220-218 by the State College of Washington.

² A recording of the interview implies a mirror that others besides himself can see and this may be why recording is not used. Concern may be more for the welfare of the therapist than that of the patient!

HYPOTHESIS

The present study is concerned with differences in response to TAT cards of high and low anxiety Ss to overt (microphone and recording apparatus in view) and covert (microphone and recording apparatus concealed) procedures. It also asks the question as to whether, within the high or within the low anxiety groups, differences due to the type of recording, overt or covert, may be found. Finally it asks whether discomfort is present in the S during overt recording as revealed in phenomenological report.

METHOD

Since this study concerned the responses of anxious and non-anxious Ss, the problem of selection of such individuals had first to be considered. Inasmuch as the validity and reliability of the Taylor Manifest Anxiety Scale (4) has been demonstrated and it is at present frequently employed, this scale was used. All new students, 1,677 entering the State College of Washington in the Fall of 1955 were given the Taylor Manifest Anxiety Scale. These tests were scored for anxiety and lying. Ss with an "L" score of 7 and over ($N = 224$) were discarded. The upper 7 and the lower 7 per cent of the remaining male and female distribution were then selected. These comprised the sample of high and low anxiety Ss. The males had "A" scores either below 4 (mean = 2.2) or above 21 (mean = 25.4); while the females had "A" scores below 7 (mean = 4.0) or above 24 (mean = 27.6). The total number of Ss selected by this method was approximately 203 and of these 105 constituted the final sample. This final sample did not differ significantly from the 203 in any phase of anxiety. It consisted of 28 males high and 28 males low in anxiety while the female sample consisted of 29 high and 20 low in anxiety.

A total of eight TAT cards were

administered to each S in two series of four cards each. These eight cards were chosen because they had been equated with respect to clinical significance (5). As a further precaution, they were also administered in an ABBA sequence. Series A comprised Cards I, IV, V, and X while Series B consisted of Cards II, IIIBM, IXBM, and XIV. Within each series the cards were always presented in a fixed order. Verbal instructions used in the administration of these cards were the standard ones.

In the covert recording situation the microphone was concealed in a filing box on the desk near the S while the recording apparatus was hidden inside a drawer. In the overt situation the microphone was near and obvious and the recording apparatus was placed in full view on the desk.

When the S knew that he was being recorded (overt situation) the E said: "It has been our policy to record some of these interviews. Do you mind if we use the recorder?" If the S objected (and three did), the E replied: "Using the recorder makes it much easier for me and the recording will not be heard by an unauthorized person." Beyond this point no one continued to or felt that he was in a position to object. If the recording was overt during the first, and covert during the second session, and the S were to ask, during the latter, whether the recorder was being used (no one did) he was to be told that it was not. The examiner in both situations sat in front of the S ostensibly taking notes in both the overt and covert situations.

The high and low anxiety Ss were each divided into four groups of approximately 28. Card series A or B were given approximately one week apart. The particular series of cards, A or B, and the overt (recorder obvious) and covert (recorder not obvious) situations were alternated for each group. The experimental design may be summarized as follows:

High Anxiety	Session I	Session II
Group 1.....	AO*	BC
Group 2.....	AC	BO
Group 3.....	BO	AC
Group 4.....	BC	AO
Low Anxiety	Session I	Session II
Group 1.....	AO	BC
Group 2.....	AC	BO
Group 3.....	BO	AC
Group 4.....	BC	AO

* Series A cards, Overt recording.

The factors analyzed were: seconds before response, word-count, rate (number of words per unit of time), clinical significance of series of stories (three clinicians rated the series as significant, indeterminate, or nonsignificant with respect to how much they revealed about the S), and a subjective (phenomenological) report. Agreement of all three judges was required in order to increase validity of the clinical significance criterion. In the phenomenological report the S was asked to check whether in giving stories when being recorded (overt) he found: less difficulty, more difficulty, or same difficulty than when (seemingly) not being recorded (covert).

RESULTS

Males and females high in anxiety and males and females low in anxiety were compared on the various criteria. In none of the criteria were the differences significant.³

In Table I, seconds before response, word-count, rate, and clinical significance of series of four stories are compared for differences between overt and covert recording for high and low anxiety Ss.

Analysis of overt and covert differences within high anxiety Ss shows a statistically significant different mean score for the first three criteria. All differences are in the same direction.

That is, during overt recording high anxiety Ss respond faster, give a greater number of words, and talk at a faster rate than during covert recording. There is no meaningful difference in the ratings of clinical significance of series of stories between overt and covert recording. A similar analysis may also be seen in Table I for differences between overt and covert recording in low anxiety Ss. Here again we find Ss responding faster, giving more words (although not significantly greater) and talking at a faster rate to the overt situation. These differences are in the same direction as found with high anxiety Ss, but not as great. Again we find no meaningful difference in the ratings of clinical significance of series of stories between overt and covert recording.

In Table II, seconds before response, word-count, rate, and clinical significance, of series of four stories are compared for differences between high and low anxiety groups for overt and covert recording.

In none of the first three criteria (seconds before response, word-count, rate) were significant differences found in overt recording between high and low anxiety Ss. Difference between high and low anxiety ratings in clinical significance of series of stories appear, but are related to anxiety and not to the type of recording.⁴

Differences between high and low anxiety groups for overt recording were also analyzed. In none of the first three criteria were significant differences found. Difference between high and low anxiety ratings of clinical significance of series of stories appear, but again are related to anxiety and not to the type of recording.

Analysis of the phenomenological data show that thirteen of the high

³ These data are available in "The Use of Overt and Covert Recording with the TAT" an unpublished thesis by Roger Edwin Sauer, State College of Washington Library, 1957.

⁴ To test the possibility of an interaction effect between level of anxiety and type of recording, analysis of variance was done for three of the criteria. No interaction effect was found.

anxiety and fourteen of the low anxiety Ss (a total of 26%) reported more difficulty in giving stories when being overtly recorded than when seemingly not being recorded (covert recording). Inasmuch as 20 of the 27 Ss (8 of the high and 12 of the low) reported more difficulty when overt recording occurred during the first session, it is necessary to bear in mind just when the recording occurs.

DISCUSSION AND CONCLUSION

Tables I and II show the presence of a difference related more to the method of recording (overt or covert) than to the presence of the degree of anxiety as measured by the Taylor Manifest Anxiety Scale. Overt recording was found to influence significantly high anxiety Ss to use a greater number of words, to respond more quickly, and to talk at a faster rate than during covert recording (Table I). This was true (though not with word-count) to a lesser degree in low anxiety Ss.

The lower word output, slower rate of speech and possibly the slower reaction time to covert recording may result from a tendency on the part of the S to pace the writing speed of the E. While the data do not permit a definitive answer, certain considerations make the assumption of pacing rather dubious. The physical set-up employed did not permit the S to obtain a clear view of the E's writing speed. Secondly, the psychological situation involved naive freshmen taking a personality test in which it might be assumed that they would be more concerned with their own feelings than with the question of pacing. Finally, although not bearing on either side of the question, it may be remarked that the situation encountered by the S is the standard clinical one.

Although differences were found, the importance of these differences is open to question in light of the lack of results found for the clinical significance of stories (Table I). Possibly the ratings of clinical significance may be questioned. Most important of all the findings, though again not without qualification, is the fact that over one-fourth of the Ss reported greater difficulty (phenomenological data) when being overtly rather than being covertly recorded. So on the one hand some might argue that the phenomenological data contraindicate the use of overt recording, while others, pointing to the results found with the first three criteria (Table I), might argue exactly the opposite. The criterion of clinical significance of stories which might help in solving this dilemma remains mute. It is one thing to find a difference and another to know exactly what such a difference indicates. It could at least be argued that first interview overt recording of the TAT is probably unwise.

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"Diagnosing" Szondi's Pictures

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The literature contains a number of studies dealing with the ability of subjects of various degrees of psychological sophistication to "diagnose" Szondi's pictures, that is, to match the stimuli of the Szondi Test (8) with their proper psychiatric diagnoses. Best and Szollosi (1), Fossberg (3), Holt (cited by Deri (2)), and Rabin (5, 6) all report that their subjects were more successful at this task than chance alone would allow. The aim of the present investigation was to determine whether performance in the psychodiagnostic matching procedure is associated with certain personality dynamics of the "diagnostician." Specifically, it was predicted that the frequency and the accuracy with which a subject used a given diagnostic category in this procedure would be related to the strength of the drive represented by that category, and the subject's acceptance of the drive, as measured by the Szondi itself. These predictions were based on the assumption that such processes as sensitization, vigilance, and perceptual defense might be operative in psychodiagnostic matching, as they have been shown to be in a variety of other experimental situations.

SUBJECTS AND PROCEDURE

The subjects were 20 male undergraduate college students majoring in psychology. All had completed a course in abnormal psychology, and none of them was familiar with the Szondi. Each of the subjects was examined individually, starting with a standard administration of the test. Immediately afterward, the subject was told that the stimulus pictures

were photographs of psychiatric patients. He was presented with a list of the eight diagnostic categories which appear in the test and instructed to match the pictures, one by one, with the diagnoses. The subject was not advised that there was an equal number of pictures for each category.

The test was scored in the manner prescribed by Szondi (9). Two measures were obtained for each of the eight test factors: a "quantitative" score, based on the absolute number of selections made from the six pictures of a factor; and a "tendency" score, based on the distribution of "likes" and "dislikes" within the factor. In interpreting the test, it is assumed that the first of these scores reflects drive strength, and the second, the subject's acceptance or non-acceptance of the drive.

RESULTS AND DISCUSSION

The distribution of accuracy scores in the psychodiagnostic matching procedure is shown in Table I. By chance, the subjects would have been expected to make an average of six correct matches out of a total of 48 (4). Actually, only one subject made fewer than this number, and the group median was 11. Four of the 20 subjects differed significantly from chance at the .05 level (11 or 12 correct matches) and four more at the .01 level (13 or 14 correct matches). The number of significant differences at both levels is itself significant at the .001 level (7). These findings corroborate those of previous investigators.

To test the predictions offered above, distributions of the frequency and accuracy scores for each factor were dichotomized as near the median as possible, and chi squares were computed between these scores on the one

¹ Formerly at New York University, where the data for this study were collected.

TABLE I—Distribution of Accuracy Scores

Correct Matches	f
5-6	1
7-8	5
9-10	3
11-12*	7
13-14**	4
N	20

* Significance is a function not only of the number of correct matches, but also of the number of times the subject uses the various diagnostic categories. For this reason, only four of the seven subjects in this class differed significantly from chance at the .05 level.

** Significant at the .01 level.

hand and the Szondi "quantitative" and "tendency" scores on the other. Table II gives the results of this analysis. Only one of the 32 chi squares is significant at the .05 level. In short, the data offer virtually no support to the research predictions.

On the basis of the available material, it cannot be determined whether the negative results are due to the misapplication of a need-in-perception frame of reference to psychodiagnostic matching, or to the shortcom-

tion, and is not related to his own personality dynamics.

SUMMARY AND CONCLUSIONS

The Szondi Test was administered to 20 undergraduate psychology majors, who then attempted to match the stimulus pictures with their proper psychiatric diagnoses.

1. Four subjects differed from chance at the .05 level and four more at the .01 level in the number of correct matches made. The number of significant differences is itself significant at the .001 level.

2. The frequency and the accuracy with which a subject used a given diagnostic category was related neither to the strength of the drive represented by that category nor to the subject's acceptance of the drive, as measured by the Szondi.

It would appear that performance in the psychodiagnostic matching procedure is not a function of the personality dynamics of the "diagnostician." Evidence from other studies suggests that familiarity with the psychiatric disorders represented in the Szondi

TABLE II—Relationships between Psychodiagnostic Matching Scores and Szondi Scores, Tested by Chi Square

	Szondi "Quantitative" Score ¹		Szondi "Tendency" Score ²	
	Frequency Score	Accuracy Score	Frequency Score	Accuracy Score
Homosexual	1.010	0.785	1.122	4.826
Sadist	0.069	2.500	2.639	4.097
Epileptic	2.081	1.000	0.729	4.667
Hysteric	2.054	5.065	0.683	3.234
Catatonic Schizophrenic	6.117	2.079	5.020	3.882
Paranoid Schizophrenic	2.443	0.144	0.254	2.972
Manic Depressive, Depressed	2.812	2.812	5.020	1.436
Manic Depressive, Manic	1.000	4.896	3.077	3.253

¹ Critical value at the .05 level for 2 d.f. = 5.991.

² Critical value at the .05 level for 3 d.f. = 7.815.

ings of the Szondi as a predictor. While the findings of Best and Szollosi (1) conflict with those of Rabin (5, 6) on this point, it may well be that the ability of an individual to "diagnose" accurately Szondi's pictures is simply a function of his familiarity with the diagnostic categories in ques-

tion, and is not related to his own personality dynamics.

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Productivity and the Clinical Use of TAT Cards¹

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A previous paper (9) introduced a method for scoring the number of emotional words produced by subjects in response to TAT pictures, and used this measure of material as a piece of information which has validity in relation to a criterion and yet can be related to global judgments by clinicians of the criterion. The present study deals with some of the problems touched on in the first investigation. The questions are: 1. What is the relationship between the clinical use of TAT stimuli and the amount of material that is likely to be produced in response to the stimuli? and 2. Can the measure of material produced be used as a dependent variable in attempts to specify the characteristics of stimuli as they affect the subject?

This study takes as its first hypothesis that some TAT cards elicit more material than others. In operational terms: there are significant differences in the median number of emotional words per story for different TAT cards. If the first hypothesis is accepted, a second can be advanced, i.e., that clinicians tend to select cards which elicit more material. In operational terms: cards eliciting a higher median number of emotional words per story are more frequently used than are cards producing a lower median number of emotional words.

If the first two hypotheses can be accepted, a third may be advanced to the effect that a positive relationship exists between the measures used in the first two hypotheses and other measures of TAT productivity. To

test this hypothesis, data reported by Eron (2) will be used. If this third hypothesis is accepted, a group of related measures of amount of material produced in response to TAT stimuli will be available to investigate characteristics of stimuli as they may effect productivity. To do this, scores used in the third hypothesis will be compared with information reported by Bijou and Kenny in a series of papers (1, 5, 6).

METHOD

Sample:

The sample consists of the five most recent TAT protocols administered by each of 35 clinical psychology trainees at a VA neuropsychiatric hospital. All of the 175 protocols were of hospitalized males between the ages of 19 and 59, who had been referred for diagnostic evaluation, and who dictated their responses to the examiner. Selection of the cards, instructions, inquiry and stenographic skill varied with the examiners. The examiner group had all had at least one year of graduate school and some experience with tests before starting their training at the hospital. All had had or were taking university sequences on the theory and application of tests. These examiners were not naive but were consciously trying out and learning about tests. Added to the variability due to previous training and experience were the frequent pressures of time and subjects' limited ability to cooperate. There were 24 male and 11 female examiners. There were no significant differences between these two groups on the scores used in this study.

Scoring:

The method for scoring number of emotional words per TAT card re-

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sponse is that introduced by Ullmann and McFarland (9). This method was shown to have a rater reliability for 20 homogeneous six card protocols of .92 product moment and .94 rank order correlations. The score of frequency of use of TAT cards is the number of times each card was used in 175 protocols.

Cards:

The stimulus material reported on in this study was the set of adult male cards as designated by Murray (7). These 20 cards comprised 93.5% of all card responses in the present sample. The use of an adult male population, the desire to compare findings with other studies, and the small N in the present sample of scores for cards not in the adult male set, led to the limitation of the present report to the 20 adult male cards.

RESULTS

The first hypothesis is that there are differences in the median number of emotional words elicited by TAT cards. The 20 by 2 table of 20 cards, high or low median number of emotional words, yields a chi-square of 143.39, where for 19 degrees of freedom, 43.82 is significant at the .001 level of significance. More powerful statistical tests would merely serve to accentuate the reliability of the differences between cards. Thus, there are clear differences between cards in terms of the number of emotional words elicited, and the first hypothesis may be accepted.

The second hypothesis is that the median number of emotional words elicited per response to the TAT cards is positively related to the frequency of use of these cards by clinicians. Table I presents the cards, the frequency of use, the number of examiners using the cards, and the median number of emotional words elicited per card response. The relationship between frequency of use and median number of emotional words yields a tau of .62, which for N of 20 is signifi-

cant beyond the .001 level of statistical significance (8).² Thus, the cards eliciting the greatest number of emotional words are used more frequently, and hypothesis 2 may be accepted.

TABLE I. Cards, Frequency of Use (FrU), Number of Examiners Using (#Ex), and Median Number of Emotional Words Per Card (Mdn.EW), for 175 Protocols.

Card	FrU	#Ex	Mdn.EW
1.....	153	34	5.50
2.....	104	30	4.77
3.....	147	34	5.64
4.....	155	34	6.56
5.....	72	28	3.50
6.....	157	34	7.63
7.....	142	33	5.81
8.....	91	30	4.42
9.....	46	23	2.50
10.....	68	26	3.70
11.....	33	18	2.80
12.....	122	33	4.09
13.....	154	35	5.37
14.....	70	25	3.17
15.....	34	18	4.50
16.....	41	17	3.50
17.....	69	26	3.08
18.....	88	30	5.31
19.....	18	10	2.88
20.....	48	22	4.38

Eron presents data as to the number of thema elicited per TAT card (2, p. 25, Table 14) and the variety of thema elicited by each card (2, pp. 37-46, sections D). The score used in the present study for variety of thema is the number of different thema per card with 5% or greater frequency, for Eron's 75 hospitalized males. Data bearing on the expectation that the measures of productivity and use pre-

² Heppell and Raimy, using institutionalized boys as subjects, note that "The analysis of variance showed that the differences between picture means (based on summing ratings of all four judges using *both* rating scales) could not be accounted for by the unreliability of the judges." (4, p. 409). Heppell and Raimy present the rank order of 15 TAT cards as to usefulness in understanding child-parent relationships (4, p. 409, Table 1). For these 15 cards, a tau of .33 is obtained with the median number of emotional words and a tau of .53 with frequency of use, the latter being significant at the .05 level.

sented in this investigation are positively related to other data reported in the literature are presented in Table II. Table II shows the interrelationships by tau between the number of thema reported by Eron (E#T), variety of thema reported by Eron (EvT), frequency of use as reported in this study (FrU), and median number of emotional words elicited per card as reported in this study (MdnEW). The expectation of positive relationships between data reported by Eron and data reported in this study, as to productivity of TAT cards, is substantiated; all the interrelationships in Table II are statistically significant at the .05 level or beyond.

TABLE II. Interrelationships of Measures of Productivity from Eron (2) and as Found in This Study. Relationships Are Tau Based on 20 TAT Cards.

	E#T	EvT	FrU	Mdn.EW
E#T.....	---	.56	.33	.41
EvT.....		---	.34	.34
FrU.....			---	.62
Mdn.EW.....				---

Significance of tau with 20 cases is: .32 at the .05; .41 at the .01; .54 at the .001, two tailed test.

Bijou and Kenny (1) rank-ordered TAT cards as to ambiguity on the basis of judgments by college students. Kenny and Bijou (6) presented data to demonstrate that level of ambiguity is curvilinearly related to amount of personal or emotional meaning injected by subjects into stories, with cards of intermediate ambiguity yielding the most material. In these studies, cards 5, 15, 18BM, 11 and 19 are designated as the most ambiguous set, cards 4, 7BM, 8BM, 12M and 13MF are designated as the intermediate ambiguity set, and cards 12BG, 1, 2, 9BM and 17BM comprise the least ambiguous set. Since the projection of personal or emotional themes is the sort of grist clinicians desire, frequency of usage should be greatest for the

intermediate ambiguity group. Kenny (5) also demonstrated that transcendence is greatest for the intermediate ambiguity group. Since a larger number and variety of thema and number of emotional words should be associated with higher transcendence, these scores should be greatest for the intermediate ambiguity group. Data in this and Eron's studies are available for 14 of the 15 cards (all but 12BG) used in the series of studies by Bijou and Kenny.

Applying Kruskal-Wallis one-way analysis of variance (8), the expectation that clinicians make most frequent use of cards in the intermediate ambiguity group is substantiated between the .05 and .02 levels of statistical significance. Cards of intermediate ambiguity elicit the most material (number of thema, variety of thema, number of emotional words). However, the relationships between levels of ambiguity and number of thema and number of emotional words by application of the Kruskal-Wallis test are at the .20 level of statistical significance. The relationship between levels of ambiguity and variety of thema is totally insignificant.³

DISCUSSION

The present study uses the method, introduced by Ullmann and McFarland (9), of quantifying emotional words on the TAT to obtain data on the relationship of elicited material to clinical use. As in the previous study, the clinician behaves in a reasonable manner. In the present case, clinical psychology trainees more frequently use the TAT cards that are likely to give them the most data. While the rationality of clinical psychology trainees is worth noting, it is

³ It is not the purpose of this paper either to confirm or to question Kenny's findings. The results are presented to illustrate a method, whether degree of ambiguity or some other variable, such as the frequency of pictures of two people interacting, is the attribute under investigation.

possible to wonder whether this group of examiners would have explained their choice of TAT cards on the basis of increasing the data with which they would work, or whether they would have used theories that make assumptions about the personalities of particular patients. To accept the latter explanation, it would be necessary for the examiners to demonstrate that their reasons add to the basal relationship existing between frequency of choice and the amount of material elicited. Both studies suggest that it is possible to devise relatively simple descriptions of the clinician's role, and in two particular cases, these formulations are significantly related to the clinician's behavior.

For future research, two facts seem worth pointing out. As Heppell and Raimy (4, p. 409) succinctly put it, "... in a given series of similar pictures some will, generally, prove more useful than others." The present study yields data which point to differences of considerable stability between TAT pictures. The data of Table I may supplement Eron's normative work and have use in the selection, equation or ordering of TAT stimuli for research.

A second aspect of this study which has bearing on future research is the demonstration with information from the studies of Bijou and Kenny that it is possible to devise a measure of subjects' responses to TAT and utilize this measure when aspects of the stimulus are varied. While great ingenuity has been demonstrated in the development of Q sorts, ratings, etc., as measures of the effect of changing the stimulus, it seems that a single acceptable method of measuring the effect on subjects' responses will conserve energy and increase the number of directly comparable studies.

SUMMARY

The purpose of this research was: (1) to investigate differences between TAT cards as stimuli leading to the production of emotional words; (2) to

relate these differences to the frequency of use of the cards in a clinical setting; (3) to compare these results with other reports of productivity of response to TAT cards; and (4) to demonstrate the practicality of using scores such as the median number of emotional words as a measure of the effect of stimulus variables on the responses of subjects.

From each of 35 clinical psychology trainees, five protocols obtained as part of routine diagnostic evaluation were selected. All the 175 protocols were of males, hospitalized for neuropsychiatric reasons, who dictated their responses to the examiner. The protocols were scored for number of emotional words for each card by the method introduced by Ullmann and McFarland (9).

Highly reliable differences were found between the median number of emotional words elicited by different TAT cards. The frequency with which the cards were selected for use by the examiners was related positively and significantly to the amount of material elicited by these cards. The findings with respect to "card pull" and frequency of use are in general agreement with previous findings reported by Eron (2), Heppell and Raimy (4), Kenny (5) and Kenny and Bijou (6).

The study is discussed in terms of a description of an aspect of the clinician's role and in terms of future research with the TAT.

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Responses of Chronic Schizophrenic Patients to Tachistoscopic Presentation of Rorschach Figures

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INTRODUCTION

Research in psychiatric illness has in recent years been more commonly oriented toward an understanding of the dynamic and genetic factors involved than toward an understanding of the actual physiological and psychological processes utilized. The development of a delusional system has been extensively studied and interpreted through the application of psychoanalytic techniques. An understanding of the sensory and perceptual mechanisms operative to make a delusion possible is much less clearly understood. It is our belief that an understanding of "how" a delusional system develops warrants considerable study. Reading of the current literature and non-systematic referral to the older literature offers a number of leads, but nowhere is there a clear picture of how a delusion is initiated and developed.

A delusion implies that there is a reception of different data from the environment or a different evaluation of sensory data than is held by most people. The latter explanation is consistent with an interpretation based on psychodynamic factors, on parataxic distortions. We are not certain that all such distortions are psychodynamically based. Theoretical formulations on other bases are certainly justified, and continued investigations from varied viewpoints are essential.

A concept fairly widespread, and to our mind quite valid, is Sullivan's concept of schizophrenic empathy. According to this concept, the child destined to potential schizophrenia

learns early to sense and respond to anxieties and hostilities of the parent. These responses frequently arise in conjunction with overt parental behavior of a contradictory nature. The child picks up minimal stimuli, frequently of a "first impression character," and holds to the evaluation thus formed. Again, it is frequently stated that one of the reasons for the difficulty so often encountered in psychotherapeutic efforts with schizophrenics is that such patients readily pick up the therapist's controlled anxieties, resentments, and hostilities, and more importantly, the schizophrenic is able to make an extremely astute observation about the therapist's weaknesses and to exploit them in his relationship with the therapist.

These clinical observations tend to indicate a rapid but faulty evaluation of certain aspects of reality. The patient appears to be unable to correctly assess the relative value of contradictory evidence. He is unable to correct himself on the basis of additional data.

One notes the rapidity with which certain "normal" people form erroneous impressions of the environment, completely out of keeping with actuality, and then elaborate a fairly complete picture on the basis of this perception. A very simple example of such behavior follows: An individual riding down the street in a strange town, unable to see all of the sights, will frequently incorrectly read a sign over a place of business, and from this very insufficient evidence, elaborate the data necessary to form an impression or Gestalt and then proceed to

discuss this elaboration as if it were correctly sensed and perceived. This sort of phenomenon, although similar to the confabulatory Rorschach response, is not always a sign of psychosis. It occurs in individuals who function adequately in most areas and who are quite open to correction of such erroneous initial impressions. It is at the point of their willingness or ability to admit error that they differ clearly from the schizophrenic. Another example of this relatively common phenomenon is the tendency of many hard of hearing persons to attempt to fill in the data that they miss. In these last situations, we find a tendency to complete the Gestalt and a willingness to change the original impression, if necessary. In all of these, there appears to be primary reliance upon initial impression.

From this purely clinical observation, we arrive at the following questions about the schizophrenic:

- (1) Is it possible that a characteristic of the schizophrenic is a tendency to form impressions on such minimal data and to continue to hold such evaluations in spite of opportunity to correct these initial impressions by the addition of further data?
- (2) Is there any method by which we can quantitatively study the formation of concepts from stimuli in the schizophrenic and the modification or preservation of such concepts in the face of quantitatively greater data?

It occurred to us that a very good method of testing would be to devise some test situation in which stimuli could be readily varied, either by time or intensity, and to study patients in that situation. Suggestions of such an experiment were obtained from the research studies of Douglas (1), Stein (2), and Weisskopf (3). It was felt that if such study were undertaken and it appeared to warrant further investigation, it would be of great advantage if the technique used

were one that could be readily reproduced.

A number of test situations were considered. The one that appeared to offer the most advantages was the use of Rorschach slides projected at varying speeds, with the plan to add other test situations later.

It is our hope in this study to follow over a relatively long period of time a relatively small group of patients, whom we have selected from the continuous care service of a psychiatric hospital. By this method we hope to find possible correlations between patients' symptoms, their behavior in the hospital and in the various test situations that are planned. It is felt that it may be a possible lead to greater understanding of the actual physiological and psychological processes associated with schizophrenia.

PROJECT PLAN

The objective was to study the responses of schizophrenic patients to a limited variety of stimuli, in this case, Rorschach figures projected upon a screen for variable short periods of time. The responses of patients to a standard image exposed to view for progressively longer periods of time were to be assessed in an attempt to ascertain whether or not there appeared to be any definite pattern of response or possibly more than one definite pattern. These responses could be studied as phenomena which would be valid for the group of patients being studied, as well as for larger groups, and no attempt to discover in them a definite pattern, unique to schizophrenia, was intended.

SUBJECTS

The subjects investigated were sixteen chronic schizophrenic patients selected randomly from a chronic ward of the continuous treatment service of a Veterans Administration psychiatric hospital. The selection of chronic schizophrenics was made for the following reasons:

1. The examiners were interested in working with schizophrenics, the largest clinical group in the hospital.
2. The chronic group would include more patients not previously exposed to the Rorschach.
3. The problem of statistical treatment of data could be more easily handled in a homogeneous group.
4. The same subjects could be used for later studies with other test situations, the risk of their being discharged and unavailable at a later time being less.

APPARATUS

The apparatus and materials used in this study included the following:

1. Slide projector (35mm).
2. Tachistoscopic shutter for slide projector so exposure time could be regulated.
3. Set of trial demonstration slides made locally.
4. Set of standard 35mm. Kodachrome Rorschach slides.
5. Screen.
6. Recorder — for getting a record of patient's responses.
7. Stop watch used for exposures longer than one second.
8. Paper, pencils, etc.
9. Adequate shades for darkening the experimental room.

PERSONNEL

The following personnel were used in securing data:

1. Test examiner, who was a person trained to give the Rorschach test.
2. Projectionist, who projected the slides and controlled time of exposures.
3. Recorder, who obtained a written and a disc recording of responses given.¹

METHOD AND PROCEDURES

Subject was seated at table directly

in front of center of screen and at a distance such that the image on the screen subtended an arc, the same angle as that which would be made by the card held in the subject's hand at the usual distance. This calculation standardized the response as far as relative size of stimulus was concerned and corresponded, in relative size, to the same image in the usual situation. The room was darkened adequately for projection purposes. The test examiner sat to the left of the subject, the recorder to the right and somewhat behind the subject, and the projectionist immediately behind the subject.

All subjects had the test procedure explained to them. An explanation of the figures, similar to that given in the usual Rorschach test, was provided. In addition, they were told that the image would be seen for only an exceedingly short time. The subjects were then instructed that trial slides would be projected as examples of what the test was about. These ink-blot figures were prepared locally. The demonstration slides were then projected and the responses called for and recorded as they were to be when the Rorschach slides were projected.

If the demonstration indicated that the subject was not responding adequately, he was questioned as to whether he understood, and any uncertainty was cleared up. If, after further explanation, the response was still inadequate, it was assumed that the cooperation of the patient was not being obtained and patient was not a suitable subject for the experiment. If the demonstration indicated that the patient was able to cooperate, he was then carried through the Rorschach procedure.

The Rorschach slides were placed in an automatic slide changer to insure that in the test there would be no chance of reversing the slides. They were presented in the usual sequence of 1-10. The subject was asked to respond to each projection. The first projection was for a period

¹ Louis W. Bova, Jr., clinical psychology graduate student, University of Florida, served as recorder; the authors wish to express their appreciation to him for his assistance.

of 1/100 second. After all ten slides had been projected, the series was repeated at 1/10 second, then at 1 second, and finally for an unlimited time. During the procedure written and disc verbatim recordings of the responses were made and this record transcribed for study, the dual recording being made to insure accurate records of responses as given.

For purposes of comparison, a complete Rorschach record was secured about two weeks later, this record being obtained by administration of the Rorschach in the usual way. Two of the subjects were not available for the regular Rorschach testing, because they had been transferred to another hospital.

RESULTS AND DISCUSSION

In Table I, the number of responses for each subject is given for each presentation of the Rorschach figures with time of exposure varying from 1/100", 1/10", 1", to unlimited time and the regular administration of the Rorschach cards.

It may be seen that there is little difference in the number of responses obtained from the 1/100", 1/10", and the 1" exposure of the figures. When there was unlimited time given, the number of responses was about double of the number obtained for

1/100". The increase in number, however, is not as great as one would expect with unlimited time given for observation of the figures. Many of the subjects, it may be noted, gave as many for the short time presentation as for the unlimited time. It is significant to note that there was little difference between the unlimited time presentation of the figures on the screen and the presentation of the figures on the cards as is done in the regular administration of the Rorschach test. While time of exposure of the figures was markedly varied in the five series of presentations or trials, it may be observed that for many subjects it was not a primary factor in determining number of responses given.

When the examiners were obtaining the data, they noted the marked tendency for the same response to be given by a subject even though the figures were different. Table II shows the frequency with which this tendency manifested itself. The first number for each trial is the number of times a given response was given by that subject during the presentation of the Rorschach figures in that particular trial with given time exposure. If the repetition or perseveration was found using a second repeated response, such is indicated in the table

TABLE I—Number of Responses for Varying Time of Exposure

Trial or Series	1	2	3	4	5
Subject No.	1/100"	1/10"	1"	Unlimited T	Regular Admn.
1.....	8	10	10	10	12
2.....	10	10	8	22	18
3.....	0	0	0	6	10
4.....	6	4	7	15	27
5.....	13	10	10	10	18
6.....	7	5	5	8	3
7.....	8	10	10	18	18
8.....	10	11	8	13	12
9.....	5	2	4	14	....
10.....	8	7	9	10	....
11.....	7	10	10	18	10
12.....	8	10	11	12	16
13.....	8	5	7	14	10
14.....	2	1	5	4	11
15.....	5	5	8	7	11
16.....	1	5	3	10	10
Average R.....	6.3	6.3	7.2	12	13

by using commas between the repeated responses. The number of repeated responses for each subject for each series is given in the numerator; the total responses given for the trial by the subject is given in the denominator. The percentage of responses repeated is then given in the immediate column to the right. The average percent for each trial or series is then given in the lowest or last horizontal line of the table.

It may be seen that for all trials, including those providing unlimited

time and those involving regular administration of the figures on cards, the frequency of repetition of the same response was marked. In several individual cases, perseveration was found in 80 to 100% of the responses given. When overall averages were computed for the subject group as a whole, it was seen that primary perseveration occurred in from 30 to 36% of the responses, while secondary perseveration was found in an additional 7 to 13% of the responses. For the group as a whole, from one-third

TABLE II—Table Showing Number of Repetitions of Same Response, Perseveration (P), in Ratio to Total Responses (R) Given

Subject	1/100"		1/10"		1"		Unlimited T		Regular Admn.	
	P R	%	P R	%	P R	%	P R	%	P R	%
1.....	2, 2 8	25, 25	2, 2, 2 10	20, 20, 20	3 10	30	3 10		3, 2 12	25, 16
2.....	3, 2 10	30, 20	2 10	20	2 8	25	3 22	14		
3.....	0		0	. .	0		6 6	100	6, 3 10	60, 30
4.....	2 6	33	4		7		3 15	20	3 27	11
5.....	3, 2 13	22, 15	3, 2 10	30, 20	3 10	30	4, 3 10	40, 30	6, 5 18	33, 30
6.....	7		5		2 5	40	2 8	25	3	
7.....	2, 2 8	25, 25	2, 3 10	20, 30	2, 2 10	20, 20	6, 3 18	33, 16	6, 2 18	33, 11
8.....	3 10	30	3, 3 11	27, 27	3 8	37	3, 2 13	22, 15	2, 2 12	16, 16
9.....	2 5	40	2 2	100	0 4	0	2 14	14		
10.....	6 8	75	6 7	86	4, 2 9	44, 22	5, 3 10	50, 30		
11.....	5 7	72	8 10	80	8, 2 10	80, 20	6 18	33	8 10	80
12.....	2 8	25	2 10	20	2 11	18	2 12	16	6, 2, 2 16	37, 12, 12
13.....	2, 2, 2 8	25, 25, 25	2 5	40	4 7	57	5, 2 14	36, 14	10 10	100
14.....					2 5	40			2, 2 11	18, 18
15.....	2 5	40			3, 2 8	37, 25	3 7	43	2, 4 11	18, 36
16.....							8 10	80	7 10	70
Average % P		30, 10		30, 7		30, 7		35, 7		36, 13

to one-half of the responses were repetitions or perseverative in nature.

A study of the quality of the responses revealed a definite concretization of thought and loss of abstractive capacity. Even with extended time and in the responses given during the regular administration of the Rorschach, the responses yielded were simple concrete wholes with little organizational or integrative quality.

The high frequency of perseveration may be tied in or related with the number of responses as given in Table I. It appeared as though the chronic schizophrenic tended to have a "one track mind." He tended to see one thing, and that was about all. This perseverative tendency reduced the number of responses given, and it made little difference whether the subject saw the blot for a very limited time or whether he had unlimited time to observe it. Most stimuli from the environment appeared to be viewed or interpreted from a set, pre-existing frame of reference, and variation in the objective stimuli produced little effect in images perceived and reported.

Whether the perceptual frame of reference was determined by psychological factors, such as effects of earlier experiences, or by physiological factors, such as neurological or biochemical condition of the cerebral cortex, was not apparent from data of this study. Further research will be needed to elaborate the determinants of this perceptual rigidity.

We plan further studies to determine whether this perseverative tendency is exhibited in the same group of subjects when subjected to other test situations. We also expect to use the same procedure described above with other diagnostic groups of psychiatric patients and a non-patient group

to determine whether other groups respond with any different patterns of perceptual behavior.

CONCLUSIONS

1. When chronic schizophrenic subjects were presented projected Rorschach figures for varying exposure periods ranging from 1/100th second to unlimited time, there was little increase in the number of responses given to longer as compared to very short exposure periods of time.
2. Even when unlimited time of viewing the figures was provided, the number of responses was small, the usual number being about one response per figure.
3. There was considerable repetition of the same response or perseveration, this averaging one-third to one-half when computed for the subjects as a whole; some individual subjects showed perseveration in 80-100% of their responses for given trials.
4. Chronic schizophrenic subjects revealed an inability to shift or alter their frame of reference so as to perceive real differences in environmental stimuli, resulting in marked perceptual rigidity and inflexibility, which appeared to be characteristic of this disorder.

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A Note on the Generality of Constriction¹

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PROBLEM

The use of the term constriction is prevalent in clinical psychology, although little logical or psychological analysis of its meaning appears in the literature. Within most contexts there is the implicit assumption that constriction is a general personality characteristic which can be identified in a variety of different situations. There is, however, virtually no evidence either to support or refute this hypothesis. Carp (3) found that although constricted behavior could be rated reliably by clinical psychologists on any one of three measures, there was no agreement between measures. Klein (4), working within the framework of psychoanalytic ego psychology, inferred a general personality dimension which he termed one of constrictive-flexible control. The study reported here represents an attempt to clarify the meaning, or meanings, of this concept.

In order to examine the generality of constriction, an analysis first was made of the contexts in which the concept appears. From this analysis three uses of constriction in clinical psychology emerged.

1. It is used to characterize certain kinds of performances on commonly used clinical techniques for appraising personality functioning.
2. It is used to refer to a restriction or inhibition of certain behavioral characteristics.
3. In a more impressionistic way it is used as a gross descriptive term applied to an individual.

METHOD

On the basis of this analysis, measures were selected and created to exemplify these various usages. Methodologically, this can be considered a study in "construct validity" (1). None of the measures used can be considered a definitive criterion of constriction but all of them are related to the concept of constriction as it is used by clinical psychologists in the above mentioned categories.

The first measures to be described were selected on the basis that they are commonly used clinical techniques in connection with which certain performances are designated as constricted. The only one of these for which the literature clearly indicates criteria for constriction, is the Rorschach test. Most contributors to this literature emphasize that an overabundance of accurate, form-determined responses is the basic definition of constriction on this instrument (2, 5, 6, 9, 11). In addition, some writers specify that stereotypic thinking as indicated by the percentage of animal percepts in the content of the record and a paucity of responses are effects of the constrictive process. In terms of Beck's (2) scoring categories for the Rorschach techniques, the constriction indicators are: percentage of form-determined responses ($F\%$), quality of form-determined responses ($F+\%$), animal percent ($A\%$), and number of responses (R). In order to deal with the overall record, all of these categories were combined to derive an index of constriction by converting the score on each category into a standard score and summing these standard scores.

Another commonly used clinical device on which performances are commonly termed constricted is the TAT,

¹ This report is based on a dissertation submitted to the Department of Psychology and The Graduate College of the University of Nebraska. I wish to express my gratitude to Dr. D. W. Dysinger for his help in supervising the research.

although this term is not found regularly in the TAT literature. An exception to this is the work of Rapaport (11), who indicates brevity of the stories and a meticulous clinging to description as indicators of constriction. A rationale for an index of constriction on this technique may be derived from personality theory. An individual who is guarded and not free to express himself unless the situation is well defined will give brief descriptive stories rather than long and more involved ones. Thus one measure would be length of the story, while another might be complexity of the theme created. A high correlation has been found between productivity as measured by the number of words used, and a theme complexity variable (10). It was decided, therefore, to use brevity of the stories as indicated by the number of words used as the TAT index of constriction for this study. The mean number of words per card was the constriction score for each subject. Six cards of the TAT were selected for the study on the assumption that they would sample adequately the variable being measured. The cards employed, in the order of administration, were 3BM, 5, 14, 15, 20, 16.

The third clinical test used was the Bender-Gestalt test. In general clinical usage, primary indicators of constriction are the area of the paper used and the size of the designs. The measure selected for this study was size of the designs with the assumption that this would be correlated with area used. Measurements were made by constructing a grid on a transparent piece of plastic, laying it over the design, and counting the number of grid squares covering each design. The score was the sum of the grid squares occupied by all of the designs for each subject.

The next two measures were selected to represent usages of the concept where it is defined as inhibition or narrowness in interests and general responsiveness. As a measure of the

extent to which a person can invest himself in interests, an Intensity of Values Test (12) was utilized. This test is described by the author as an adaptation of the Allport-Vernon Study of Values. Though scores on four separate scales are available, an overall score indicating total investment in interests and activities is also obtained. This test seemed particularly suitable for this study because in constructing it, items were selected using the method of equal appearing intervals so that they are weighed differentially. In other words, different items express different degrees of interest in any area. This makes it possible for one individual who has intense interest in one area to get a score as high as the individual who has broader but more superficial interests.

A narrow range of responsiveness theoretically, empirically, and even literally is perhaps the most general and precise description of constriction. This would be manifested by a relative curtailment of "free association" (4) and by a tendency to avoid extremes in expression of feeling. The Semantic Differential developed by Osgood (7, 8) can be used to measure these efforts. It consists of a series of concepts and sets of descriptive polarities, such that each concept is associated with each polarity. The polarities are at either end of a scale on which the subject places a mark to indicate his association of the concept with the polarity. The position of the mark indicates direction and intensity, with the central point indicating that the subject sees no relationship. Since each association involves a judgment as to the kind, as well as of the intensity of this relationship, the technique is well described as a combination of associational and scaling methods (7). As arranged for this study, the scales contain nine positions instead of the usual seven to make for a wider spread. The scales allow much room for individualized reactions to be

demonstrated in terms of direction and degree. The measure of constriction on this technique follows from the description of the constricted person as one with a narrow range of responsiveness. Highly constricted people would tend to have their marks cluster closer to the center of the various dimensions.

A group of items comprising a constriction scale was developed to obtain a measure of constriction based on the common clinical practice of describing a person as constricted. It consists of 42 statements which 29 out of 39 clinical psychologists agreed were descriptive of characteristics of constricted people. There was considerable variability in the use of specific items by various clinicians, but common use of a statement by 29 judges was required for it to be included. Thus in most instances the actual ratio of agreement would be higher than 29 out of 39. The universe from which the items were selected was the California Psychological Inventory developed by Gough. The items on the inventory were converted into the third person before being sent to the judges. The transformation into the third person served two purposes: (a) preliminary work suggested that it facilitated the task for the judge by preventing attempts to *predict* how the constricted person might respond; (b) it made it possible to use the scale as a peer description technique. Thus the judges selecting the items, and the subjects who later described each other in regard to them, worked from the frame of reference of an external observer. The ratings were obtained in a group session at which each person received five copies of the scale. On each copy appeared the name of one of the group members. Before beginning the administration a preliminary discussion was held, which was designed to develop rapport in the hope of persuading the group members to exercise care in making their judgments. Instructions

were given orally at this time and were repeated after the scales were handed out. There were printed instructions at the end of each scale available for the use of the subjects as reminders. The subjects were to decide whether each item was primarily true or not about each person they rated. Rates were assigned to each rater so that each person rated five different people and each person was rated five times. The final constriction index for each person was the median of the sum of the values assigned by the five raters.

The subjects in this study were 31 undergraduates, of whom 21 were members of a sorority, and 11 were male members of an athletic squad. In obtaining the peer descriptions each group was worked with separately. In the initial session, after some discussion of the study, the peer descriptions were obtained. Following this, appointments were made for administration of the three clinical techniques. Each subject was seen individually for these and, in most cases, all three tests were given in one session. The order of administration was the Rorschach technique, followed by the Bender-Gestalt test, and then the TAT. In a second group meeting the Semantic Differential and the interest test were administered.

RESULTS AND DISCUSSION

Of the fifteen correlation coefficients only four are large enough to be statistically significant at the 5% level and the magnitude of these is low.

It would appear that the generality of constriction is highly limited. Though there seems to be some general constrictive tendency apparent in some people, much attention has to be devoted to the specifics of the situation within which a person is being evaluated. This finding seems consistent with the general emphasis today both in testing and in ego oriented psychotherapy to understand the real-

TABLE I—Intercorrelations Among the Constriction Measures

Measures	CPR	Ror.	TAT	B-G	S.D.
Constriction peer ratings.....					
Rorschach.....	.11				
TAT.....	.20	.34*			
Bender-Gestalt.....	.19	-.13	-.19		
Semantic Differential.....	.36*	-.18	.34*	.20	
Interests.....	.34*	.11	.00	.00	.17

* Significant at the 5% level.

ity situation of the client or patient before making "deep" interpretations. From the results of this study it might follow that the term constriction should be used, if at all, with great care.* Precise usage would demand a specification of the tests or situations in which the constriction is noted. Even greater precision and utility might be gained by specifying the psychological functions that are constricted (6). Instead of saying that a person "is constricted" or has produced a "constricted Rorschach" it would be more helpful in understanding the individual were the dynamic and overt behavioral implications of such statements clearly articulated.

SUMMARY

This study was an attempt to explore the extent to which constriction is a general personality characteristic. After an analysis of some ways in which the concept is used in clinical psychology, measures representing these usages were selected and 31 subjects were tested. The scores on these measures, which included the Rorschach Test, TAT, Bender-Gestalt, peer ratings on a constriction scale, an interest test, and the Semantic Differential technique, were inter-correlated. The results indicate that very little generality can be attributed to the constriction concept.

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Hostile Acting Out and Rorschach Test Content¹

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The presentations of Rorschach Test interpretations may be looked upon as working ideas, clinical hunches, and hypotheses based on an understanding of personality theory and clinical experience. Seen in this light, these hypotheses are amenable to experimental investigation and scientific scrutiny. Phillips and Smith (4) have been among the first to advance our progress in this area with their presentation of statements about relationships between Rorschach performance and other behavior. This paper investigates Phillips' hypotheses with reference to the anatomy content response in the Rorschach Test.

Phillips and Smith state the following: "Anatomy content reflects a sensitivity to, and concern with, the expression of destructive impulses. Paradoxically, those individuals who act out their destructive impulses do not develop anatomy content; the records of an assaultive group are conspicuously devoid of any anatomy responses." (4, p. 123)

PROBLEM

This hypothesis, suggested by Phillips and Smith, that individuals who act out their destructive impulses do not develop anatomy content in their Rorschach Test responses represents the first of two approaches utilized in this study of the problem of hostile acting out and Rorschach Test content. The specific prediction tested is that individuals who have a history of

acting out produce less anatomy content in their Rorschach Test content than do individuals of similar psychological makeup who do not act out in hostile fashion.

PROCEDURE

The experimental population consisted of 37 male veterans who were hospitalized in a VA neuropsychiatric hospital. As part of the therapeutic team operations, each of these subjects had been administered a Rorschach Test by one of eight team psychologists and had produced ten or more Rorschach responses. Those patients whose protocols showed less than ten responses were excluded from the study. Other than the latter consideration, the experimental population was a random sample.

The median age of the subjects was 32, and the median education was eleventh grade. Diagnostically, 68% of the 37 subjects, or 25 in number, were classified as schizophrenic reactions, with over half of these (14) further classified as paranoid type. The diagnoses of the 12 non-schizophrenic patients were mainly psychoneurotic reactions and character disorder problems. Since Phillips and Smith point out that 800 of the 1590 Rorschach protocols to which they have made reference are from state hospital patients of varied diagnostic groups, the subjects utilized in this study appear to be consistent with the majority of patients upon which is based the hypotheses of the relationship between anatomy content and hostile acting out.

With respect to Rorschach data for the 37 subjects, the number of responses ranged from 10 to 99 per protocol, with a median of 28 responses. The number of anatomy responses per record ranged from 0 to 9, with

¹ Presented at the 1956 meeting of the Eastern Psychological Association in Atlantic City, New Jersey.

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³ From research conducted while on the staff of Veterans Administration Hospital, Brockton, Massachusetts.

TABLE I. Rorschach Test Data from 37 Hospitalized Subjects
Classified with Respect to Hostile Acting Out

Groups Actors-out	Total R	Anatomy Content		Hostility Content	
		No.	Classific.*	No.	Classific.*
1.	41	1	Low	11	High
2.	37	1	Low	4	High
3.	22	**2	Low	5	High
4.	13	3	High	2	Low
5.	17	0	Low	4	High
6.	18	1	Low	5	High
7.	19	**2	High	8	High
8.	20	0	Low	4	High
9.	22	0	Low	**3	Low
10.	23	5	High	0	Low
11.	33	1	Low	4	High
12.	35	**2	Low	0	Low
13.	37	1	Low	5	High
14.	42	1	Low	5	High
15.	45	0	Low	**3	High
16.	62	3	High	10	High
17.	68	9	High	7	High
18.	69	**2	High	**3	Low
19.	99	5	High	5	High
20.	10	7	High	1	Low
Non-Actors					
21.	43	3	High	2	Low
22.	81	4	High	**3	High
23.	13	3	High	0	Low
24.	13	0	Low	**3	Low
25.	13	1	Low*	2	Low
26.	13	1	Low	1	Low
27.	15	0	Low	2	Low
28.	19	0	Low	**3	High
29.	21	**2	Low	1	Low
30.	25	**2	High	0	Low
31.	26	0	Low	2	Low
32.	28	3	High	2	Low
33.	30	3	High	1	Low
34.	32	3	High	0	Low
35.	32	4	High	4	High
36.	34	**2	Low	0	Low
37.	43	1	Low	5	High

* Classification as to high and low anatomy and hostility content based on whether score falls above or below median score of all subjects.

** Grand medians for anatomy and hostility were 2 and 3 responses, respectively. For those scores falling at the median, classifications were alternately classified as low and high.

the median at 2. A four-fold contingency table using 28 total responses and 2 anatomy responses as points of dichotomy resulted in a chi square of .23, with a *p* value of .52, supporting the contention that the classifications are independent of each other — i.e., that Rorschach productivity and production of anatomy content are independent phenomena. Looking at the data, one may see this reflected (Table I.) For example, the patient with the fewest number of Rorschach

responses, 10, produced 7 anatomy responses, while another patient who gave as many as 43 responses produced just 1 anatomy response.

Keeping in mind that statistical treatment of the anatomy response distribution will utilize the median, one might note in passing that a mean production of 2.1 anatomy responses (standard deviation 2.0) in our experimental population is somewhat similar to Beck's et al. (1) report of 1.6 responses (standard devia-

tion 2.0) from among their sample of department store workers. Similarly, Rav (5) reported a mean of 1.6 anatomy responses from an unselected group of 200 normal male subjects.

To return to the specific prediction under test, individuals who have a history of hostile acting out will produce less anatomy content in their Rorschach Test content than do those who do not act out. To investigate this, the 37 subjects were divided into two groups. One group was designated the "Actors-out", totaling 20 subjects, and the second group was termed the "Non-Actors", numbering 17. Categorization was based on an intensive review of these patients' overt behavior as recorded in social service and psychiatric histories, and on current hospital nursing and physicians' notes and progress reports. One example of a patient's history who was classified as an "Actors-out" may illustrate the basis for such classification. Mr. G. in the "Actors-out" group was reported in the case history, and from current social service reports, as having had a 3-year history of assaultive behavior towards his wife. He was reported to have made several murder attempts on her life, and on one occasion was said to have raped her. At the time he was picked up by police authorities and committed to a state hospital, he was reported to have unauthorized possession of a gun. Patients who were classed as "Non-Actors" were those who, from their histories or from current clinical records, showed no evidences of hostile acting-out behavior.

With respect to the two groups, the "Actors-out" and the "Non-Actors", there were no significant differences in age, education, diagnostic classification, or total Rorschach productivity.

RESULTS

Investigation of the prediction that individuals who have a history of hostile acting out will produce less Rorschach anatomy content than do

those who do not act out reveals no significant differences in production of anatomy content between the two groups. Utilizing deviations from the grand median of 2 anatomy responses as representing high and low anatomy content productivity, Rorschach protocols of the 20 "Actors-out" fell into classifications of 12 low anatomy respondents, and 8 high anatomy respondents. The 17 "Non-Actors" distributed themselves into 9 low anatomy and 8 high anatomy respondents, respectively (Table I). The chi square of .19 did not approach a statistical level of significance. Hence, it is concluded that Rorschach anatomy content productivity, considered in isolation to other Rorschach elements, does not differentiate the hostile "Actor-out" from the "Non-Actor" insofar as the latter characterizations are defined in this study.

DISCUSSION

In view of this finding that anatomy content productivity in the Rorschach does not differentiate hostile "Actors-out" from "Non-Actors", a second approach to Rorschach content and acting out was utilized, taking into account several recent studies relating Rorschach content and acting-out behavior. In these studies, total content is assessed from the viewpoint of hostile connotation, and the relationship of this Rorschach assessment of hostility with other behavior is compared. For example, Storment and Finney (6) reported 23 non-assaultive and 23 assaultive hospitalized psychiatric patients differed significantly on a rating of aggressive content based upon total Rorschach content. As Finney (3) concluded, in a more recent report, these studies in general would tend to support the contention that hostility in the personality is reflected in the amount of destructive and hostile content in the Rorschach.

In light of the above, a possible explanation for the negative findings relative to anatomy content may be

found when one takes into account the probability that the "Non-Actors", not having impulses nor propensities directed toward hostility, are not concerned with necessities to control acting out behavior. Stating it another way is to think in dual terms; namely, hostile impulses, and control of them. It may be that the anatomy response represents, for those with the hostile impulses, a control factor represented by the channeling of these impulses into somatization and self-preoccupation, with its implications of concern over one's own bodily integrity as a possible fear-reaction because of fantasized retribution and retaliation for hostile thoughts and impulses. However, for those individuals who show little of these hostile feelings and impulses, the anatomy response may well represent some other meaning not necessarily associated with control over hostile impulsivity. There are, in fact, several hypotheses proposed in the psychological literature which suggest that anatomy content may have various other behavioral correlates.

If the above formulation is appropriate, the "Actors-out" and "Non-Actors" should, first of all, differ significantly in their so-called hostile content productions to the Rorschach

Test. This is in fact the case. Utilizing a Rorschach score for hostile content similar to Elizur's (2) and, of course, omitting hostile-tinged anatomy responses in the scoring, the median number of "hostile" responses was 3. A contingency table (utilizing this median of 3 "hostile" responses as a cutting point for high and low categorizations) is presented in Table II for the "Actors-out" and "Non-Actors" in relation to their productivity of both anatomy and "hostile" content.

Employing Wilson's (7) modification of Rao's chi square statistic for a contingency table, an over-all chi square of 8.97 is obtained for both groups compared on hostile and anatomy response productivity which, with 3 degrees of freedom, is significant at about the .03 level. The interaction chi square between anatomy and hostile response productivity is not significant (chi square is .84) and, as mentioned previously, neither is the comparison between anatomy and groups (chi square is .19). However, the chi square between groups and hostile response productivity of 7.94 is significant at approximately the .005 probability level. Therefore, hostile response productivity on the Rorschach test is the major factor which

TABLE II. Contingency Table for Productivity of Anatomy and Hostile Content on the Rorschach Test

Actors-out	Hostile Responses	High Low	Anatomy Responses		14 6 <hr/> 20
			Low	High	
			10 2 <hr/> 12	4 4 <hr/> 8	
Non-Actors	Hostile Responses	High Low	Anatomy Responses		4 13 <hr/> 17
			Low	High	
			2 7 <hr/> 9	2 6 <hr/> 8	
		X ²	d.f.	P	
Total.....		8.97	3	.03	
Hostility.....		7.94	1	.005	
Anatomy.....		0.19	1	Non-significant	
Interaction of.....		0.84	1	Non-significant	
Hostility X Anatomy.....					

differentiates the "Actors-out" population from the "Non-Actors".

The median number of "hostile" responses for the "Actors-out" group is 4, and for the "Non-Actors" is 2. The "hostile" response is somewhat related to Rorschach productivity in that the more responses elicited, the more likely one is to produce a greater number of "hostile" responses. However, since this holds for both the "Actors-out" and the "Non-Actors", and since the two groups do not differ significantly on Rorschach productivity, it is appropriate to conclude that "Actors-out" produce a greater number of hostile content responses than do "Non-Actors", irrespective of total Rorschach responsiveness. To review, it has been noted that "Actors-out" and "Non-Actors" do not differ in their production of anatomy responses to the Rorschach, but "Actors-out" do produce a greater number of so-called hostile percepts in their Rorschach responses than do "Non-Actors". Both findings are independent of total Rorschach responsiveness.

SUMMARY AND CONCLUSIONS

To summarize, production of anatomy responses to the Rorschach does not differentiate "Actors-out" from "Non-Actors", unless propensities toward the production of overall hostile content are taken into account. Terming the latter activity as evidence of what might be called "hostile drive strength", one finds that high hostile drive strength along with few anatomy responses characterizes the "Actors-out". Those individuals with low hostile drive strength along with few anatomy responses characterize the "Non-Actors". This finding contributed to the results in the first portion of the study in which anatomy content considered in isolation does not differentiate between the "Actors-out" and the "Non-Actors". Therefore, the hypothesis that individuals who act out their destructive impulses do not develop anatomy con-

tent in their Rorschach Test responses, in not taking into account the individuals' hostile drive strength, does not hold up. However, when one takes into account the predisposition to hostile impulses — what has been termed "hostile drive strength" — then one finds few anatomy responses are produced by the "Actors-out", who have high hostile drive strength, but also, few anatomy responses are given by the "Non-Actors", who are seemingly unconcerned with hostile impulses — who are low hostile drive individuals. Although a chi square reaches only a 10% significance level, the trend reveals that among the 22 of the 37 subjects so classified in the following dual terms, "Actors-out" are those with high hostile drive strength and few anatomy responses, while the "Non-Actors" show low hostile drive strength and a high production of anatomy responses to the Rorschach Test.

In conclusion, it is proposed that in relation to acting out of hostile and destructive impulses, production of the anatomy response be viewed as a channelizing or control activity for those individuals concerned with hostile impulses and tensions. But for those who do not have, or have a relatively small degree of these hostile drives within their personality organization, the anatomy response may not need to represent the control or substitutive activity required by the high hostile drive individuals. An investigation as to the possible meanings of anatomy response content in the Rorschach Test from respondents classified operationally as unconcerned with hostility and its control might well be worthy of consideration.

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BOOK REVIEWS

Garfield, Sol L. *Introductory Clinical Psychology*. New York: The Macmillan Company, 1957. Pp. xiii - 469.

Sometimes it is good fun to read a guide book to your own home town, to see how the city hall or the public library is supposed to look to the newcomer. It is an intrepid psychologist who undertakes to write a guide book to clinical psychology in this year of Our Lord 1957, when it is so difficult to lay the finger on what is stable in this rapidly changing and slippery field. Dr. Garfield gives the reader the impression that he has a bear by the tail. It is indeed in the department of understatement to say, as he does, that "the methods and activities of the clinical psychologist have not remained static" and that "the situation as it exists today is still far from conclusively settled." In this book which has been seven years in the writing and which has required "endless revision," there is a feeling of breathlessness about getting a paragraph completed before another drastic change occurs in this fluid, "dynamic and evolving profession."

This text is written at a level appropriate for college seniors who are considering a career in clinical psychology, or for graduate students in their first stages of training. The chapters deal with the expected subjects with which the young clinician would want to be familiar, under the rubrics of historical development, diagnostic study, appraisal of intellectual functions, methods of appraising personality, psychotherapy, research, clinical settings, problems and professional development. There would be other logical methods of organization, inclusion, and emphasis. There could be more on theory and so-called "methodology," less on professional problems; more on therapy, less on diagnostic study, and so on. But these matters are questions of taste and congeniality, and probably the proof of the pudding is in the eating. Actually we know as little about the "success" of college textbooks as about outcomes of therapy, and the problem is equally worthy of investigation.

To the old clinician, raised in an era before most of the present-day complexities were born, there are many interesting points about this book. I shall comment briefly on a few.

In spite of the fact that the problem of

validation is not much more satisfactory in the measurement of intellectual functioning than it is anywhere else, less concern is expressed in this area and more feeling is conveyed of being on solid ground. This may be due in part to the longer history of clinical psychology in intelligence testing, in part to the greater reliability of the measures, in part to the tranquillizing effect of Terman's dictum of long ago that "intelligence is what the tests measure." Perhaps all of these have served to make us fret less about our difficulties with this criterion. In any case, in this text as in others, the sections on appraisal of intellectual functioning appear to be written with more comfort and confidence than those on the appraisal of personality.

If the book has a central doctrine, it is that "a mature understanding of the dynamics of personality adjustment is a prerequisite . . . for all functions of the clinician in psychology." This point is stressed again and again, and along with it is emphasized the student's need for vigilance that he do nothing blindly or routinely, but that instead he examine and criticize and understand and apply the theoretical assumptions that are implicit in any given technique. Thus he escapes the role of technician. The importance of theory as an organizing and integrating principle and as a frame of reference for all clinical functioning is always in the forefront of Garfield's discussion. He does not plug for one specific theory, though his own is easily discernible. Indeed he obviously does not regard it as part of his assignment to introduce the student to the broad field of personality theory. In considering theory, as in the description and elaboration of specific tests, he points to many references in the literature and sends the student out on his own.

Garfield sets a good example to the student as an honest critic. He faces the fact that our clinical instruments "leave much to be desired," and he encourages the student to assess rigorously their strengths and limitations. Even though he is frank about his own preference for projective tests, believing that they "have certain values which are not to be found in other tests of personality," nevertheless he deals candidly and sensitively with the chaos that results from their unreliability and from the unsatisfactory status of their validity, citing studies in support. This is not a painless operation and the absence of a solution makes it worse. Is personality itself

so variable and unreliable, and are the tests so sensitive that they detect the changes? Or are the tests merely unreliable? These questions are bothersome to Garfield and some of the negative findings on the validity of the Rorschach torment him, too.

Incidentally, it is interesting that although clinicians extol the value and importance of research, they are relatively impervious to the implications of research findings. Even writers who are not themselves partial to projective tests, after reviewing the discouraging evidence about their validity hasten to make such comments as "this is not to say that the instrument is of no value in the hands of a skilled clinician." It is demonstrated that certain kinds of Rorschach responses traditionally associated with anxiety fail completely to differentiate between anxious and non-anxious patients, or that other responses previously thought to differentiate between homosexual and non-homosexual groups do not do so. Yet clinicians seem to act and to write reports as if these findings were not known. I have wondered about the reasons for this curious phenomenon. Perhaps it stems from the fact that we have nothing better than these tests. Perhaps there is low faith in the criterion, so that there is little credence in the findings. Or perhaps we suffer from the lack of specificity in psychotherapeutic procedures growing out of test interpretation, a specificity which could confront us head on and prove us right or wrong.

Garfield makes a consistent effort to break down the association of "clinical" with abnormal phenomena. Hence he includes in the text a treatment of such overlapping functions as educational and vocational guidance, counselling and school psychology. He is trying to write this book with the question in mind, "Where is clinical psychology going?" Clearly he feels it might go almost anywhere. He discusses these problems only superficially, not exhaustively or systematically, but with the belief that the clinical psychologist should be prepared, should have some familiarity with these tests and with these fields, and should view an educational or vocational problem as a probable symptom of some deeper emotional difficulty.

The discussion of psychotherapy is well tied in with the professional status of clinical psychology, with full awareness of the interprofessional whirlpools and cross currents. There is no minimizing of the tensions and obstacles that lie ahead, and the issues that are considered are very new and current, hot off the griddle.

It is in the chapter on research that Garfield's frustration is expressed most clearly. He deplores the triviality of much current research, the negative findings when experiments are repeated, the difficulty of studying basic problems and the consequent reluctance, the poor quality of many published studies from the point of view of research design and method. Here is the frustrated lament of a clinical psychologist pressed by feelings of guilt that our discipline does so poorly, of desperation that where we need to know so much we know so little.

A very weak feature about this book is the subject index. There is no entry for such a concept as "sample" or "sampling"; "theory" does not appear there; nor does "questionnaire," although all of these are mentioned in the text. This deficiency may limit its usefulness to students.

It is fascinating to compare this very fresh textbook in clinical psychology with Louttit's of 1936, the earliest in the field. In Louttit there is no word of psychotherapy. There is one brief chapter on "personality problems" in which inferiority feelings, jealousy, fear, daydreaming, negativism and disobedience are considered. But there is nothing about personality measurement or theory. There is a great deal about school retardation, specific disabilities and sensory defects. Then clinical psychology was frankly an art and there was no effort to make it a scientific discipline and no worry over methods and criteria. The world of clinical psychology was limited and there needed be no space given to ethical principles or to a variety of settings for the clinician. Already, however, there was a struggle for a definition of clinical psychology and a committee of the APA had been appointed to formulate one! The life of the clinician was simpler in those days and much less frustrating, but today's hurlyburly offers far more stimulus and promise.

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Veterans Administration
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We deeply regret the death of Dr. Ruth Tolman on September 18, 1957.

Levine, Edna S. *Youth In A Soundless World: A Search For Personality*. New York: New York University Press, 1956. pp. xiii + 217.

Levine's study is a welcome addition to the meager literature on personality processes in the physically handicapped. It raises what, to this reviewer, is the critical issue in studies of such groups: Is the impoverishment and flattening of performance a function of the handicap itself or of the type of schooling which society has invented for deaf children? Levine's study of Wechsler and Rorschach performance of 51 adolescent girls in a New York residential school for the deaf confirms the findings of personality deficiencies that others have also noted in the deaf:

The personality pattern of the deaf subjects was found to be characterized by: (1) pronounced underdevelopment in conceptual forms of mental activity; (2) emotional underdevelopment; (3) a substantial lag in understanding the dynamics of interpersonal relationships as well as the world about; (4) a highly egocentric life perspective; (5) a markedly constricted life area; and (6) a rigid adherence to the book-of-etiquette code rather than inner sensibility as standards for behaving and even for feeling. (p. 146)

This devastating conclusion rests on the Wechsler and Rorschach findings. The Wechsler evidence shows that, despite normal Full Scale I.Q.'s in this selected group, the deaf girls exhibit clear-cut quantitative inferiority in all Verbal subtests and superiority on the Performance Scale, particularly "in visual-motor coordination and visual organization ability," especially in the Object Assembly and Block Design subtests. Levine interprets the high Performance results as evidence of high "innate mental capacity" with the Verbal deficit seen as pointing to "correspondingly delayed pace of abstract mental development."

Unlike Fiedler and Stone (this journal, 1956, 273-279) in their study of children with mild hearing defects, Levine reports for her severely handicapped deaf girls an array of marked shifts toward inferiority in Rorschach performance: underproduction of W with mediocre quality, overproduction of D, underproduction of M, overproduction of F, underproduction of FC coupled with high CF, overproduction of A and an "absence of traditional Rorschach signs of emotional disturbance." While Levine's Rorschach analyses may be regarded by some as over-literal there can be no quarrel with her basic finding that

"the functioning intelligence of the Experimental Group is seen to be of the noncreative, reproductive type with lowered capacity for conceptual thinking and strong emphasis upon concrete tangible stimuli," at the same time that there is "no indication of limited mental endowment." (p. 142) The reviewer would add that the typical Rorschach scoring patterns produced by these 15 to 18 year olds are remarkably immature and resemble those of young school age children.

For this reviewer the crux of the matter comes in Dr. Levine's cautious interpretation which points to the techniques of teaching as well as to the handicap of deafness itself.

... because of the unique restrictions imposed by deafness upon global and unconscious learning, reality is taught object by object, incident by incident, situation by situation in a more or less rigid way. It is a very long time before such labored learnings become assimilated from the consciously retained form into the deeper and more personal spheres of inner development. In the meantime, deaf pupils are obliged to hold fast to conscious standards, to the rigid scheme of reality they have been taught, and having so been taught, about which they are sure. It is to be expected that such a rigid scheme of acquiring inner concepts would result in constriction and inflexibility of personality. (p. 136-7)

By now, the public is generally familiar with what happens to speech when deafness is early and profound. But few stop to think of what happens to the development of language when it is learned the way the deaf do: fragment by fragment, slowly, painstakingly, in contrived situations, often out of context, and usually out of rhythm with the growing child's needs of the moment. (p. 164)

In addition to these rigidity-producing characteristics of the teaching methods used with deaf children one should consider the isolation of children in special schools, particularly residential schools. Levine speaks of this in terms of protection:

The general absence of signs of disturbance may be due to the fact that the residential school environment to which these girls have adjusted protects them from numerous daily-life experiences that might cause tension and anxiety. It is a question whether such protection makes for inner stability or for weakness when the time comes to face the world. (p. 144)

It is a further question whether such "pro-

tection" does not make for further constriction, narrowing of experience and, hence, rigidity.

All in all, however, the problem that the deaf child faces is, as Levine suggests, partly the product of our attempts to bridge the communication gap. As she puts it, "the deaf child's need for vocabulary is so great that the push to fill him with words instead of language is often irresistible." (p. 144) The reviewer shares Levine's respect for the skill and devotion of the teachers of deaf children, but it is his belief that there is room for even more questioning of the pattern of their teaching than Levine here ventures. Indeed, some as yet unpublished research in which the reviewer has participated has brought forth experimental evidence that some loosen-

ing of these shackles is possible; evidence which shows that with broader experiences as part of their educational background deaf children may go further toward "spontaneous ventures into not-yet-learned and consequently unknown life areas." (p. 144)

Dr. Levine's volume includes a section on educational approaches to deaf children which psychologists will find most valuable although the material may be quite familiar to specialists in the education of the deaf. By the same token, the rather detailed description of test materials and procedures which may induce impatience in the psychologist may well be of value to the educators for whom the book is also intended.

L. JOSEPH STONE

GENERAL NEWSLETTER

Pertejo, J. Estado actual de los tests proyectivos y el problema de su validación. *Revista de Psicología general y aplicada*, 1956, 11, 663-675.

A discussion of sources of information, points of view and considerations in the validation of the Rorschach primarily, including the state of affairs in Spain regarding the Rorschach.

Boulanger-Balleyguier, G. Étude sur le C.A.T.: influence du stimulus sur les recits d'enfants de 3 a 8 ans. *Revue de Psychologie appliquée*, 1957, 7, 1-28.

A research investigation into the relative importance of stimulus characteristics and internal dynamics as determinants of stories told to the C.A.T.

Tamarin, Georges. Un essai d'explication des reponses "position" dans le test de Rorschach. *Revue de Psychologie appliquée*, 1957, 7, 53-58.

Rorschach position responses are conceived as a combination of exaggerated precision and confabulation and imply a struggle toward reality.

Grünewald, Gerhard. Graphometrie Grössenveränderungen einer 25 Jahre umfassenden Handschriftenwicklung. *Zeitschr. f. diagnost. Psychol.*, 1957, 5, 81-100.

Methods of evaluation and measurement of handwriting are described and exemplified by a 25-year follow-up of one person's writing.

Bäumler, Fr. Psychodiagnostische Untersuchungen bei einem 12-jährigen schizophrenen Mädchen. *Zeitschr.*

f. diagnost. Psychol., 1957, 5, 114-122.

The Rorschach and Tree Tests are used in clarification of the diagnosis of a schizophrenic girl.

Yosinaru, Huzioka. A statistical approach to group comparison based on the distribution of Rorschach responses. *Memoire of the Research Institute for Humanistic Studies: Kyoto University*, 1957, 1, 23-38.

A mathematical formulation is presented which attempts to treat the whole Rorschach pattern of a cultural group as a unit. The distributions of location-content frequencies in a variety of Rorschach samples are found to be similar to distributions found in biological studies.

Sacco, Francesco. Il P.F.S. di Rosenzweig "Form for Children" applicato ai fanciulli siciliani: patterns e tendenze. *Rassegna di Psicol. generale e clinica*, 1956, 1, 75-90.

Statistical findings are presented for the performance of a sample of Sicilian children on Rosenzweig's P-F test.

Ponzo, Ezio. Proposta di una tecnica di controllo del test del disegno di persona. *Rassegna di Psicol. generale e clinica*, 1956, 1, 91-104.

A variation of human figure drawing procedures requiring the subject to draw as if he were an idiot.

Seguin, Roger. Interpretacao estrutural de sintoma psicopatologicos atraves de testes projetivos. *J. Brasileiro de Psiquiatria*, 1957, 6, 26-41.

A case study of an obsessive-compulsive neurosis with the Rorschach and TAT.

The President's Report

Let me bring you up to date on the affairs of the Society for Projective Techniques, in case you were not at the meetings: It would be easier for me to chide those of you who were absent from the business meeting, had I, myself, been a more faithful attendant of the business meetings of the various societies I belong to, in the past. Having this job now with the Society for Projective Techniques has taught me something about that: It is not very wise to cultivate a lofty disdain of business meetings and "political" things in general, reserving one's interest for pure science. The two aspects are as inseparable as form and content: unless the administrative and executive machinery provides the best possible framework, professional and scientific progress cannot be optimal.

An all-day meeting of the *outgoing Board* was followed by the *annual business meeting*; the highlights of the problems of the past year were presented and the recommendations by the hardworking committees and the Board were submitted to vote for decision. For the present, I will single out only a few details: the Research Committee under Dr. Feifel did most valuable work in outlining research tasks for the Society; the Regional Committee, under Dr. Dörken, was very active in stimulating local interests in projective techniques; the Nominating Committee, under Dr. Holzberg, suggested some procedural changes for elections, which you will probably consider marked progress; the editorial staff of our Journal, I sincerely believe, does a much better job than any other scientific Journal I know of, with regard to little publication lag, utilization of space and general caliber. Lastly, the work of the Training Committee, under Dr. Kass, was of very great value: They collected data from thirty Universi-

ties concerning their practices in teaching projective techniques in doctoral programs.

One alarming idea was expressed by some of those responsible for training in projective techniques, namely, that they consider it the University's job to offer only fundamental methodological considerations rather than to teach the use of projective techniques. This seems like a bad case of washing one's hands of definitive problems, via rationalization. The matter hinges on the fact that psychology was primarily an academic science and has become primarily a profession, which is, however, still taught in graduate schools rather than professional schools, or both. Since candidates in a clinical Ph.D. program obviously expect to be professional clinicians, a University appears to me, in such cases, to fall short of offering the necessary training when it proposes to offer only a purely academic program. The result is far from academic — an uneven, if not poor level of competence in dealing with projective techniques and other clinical problems, the knowledge of which must be acquired on a catch as catch can basis, after the Ph.D. The universities, I personally think, behave that way because they do not have enough properly trained clinicians on their staff to teach clinical procedures properly. Where, at least, this involves projective techniques, I believe it is the Society's task to look after the matter.

So much for the very excellent work of the various Committees; I will return to the past work of the other committees in future reports of relevant developments, but now let me tell you more about the meetings: The Program arranged by the Society for Projective Techniques and Division 12 seemed to be an unusual success: Most of the time the sym-

posium filled the largest available auditorium—which was very large indeed. The presidential dinner and address was well received. Even the hotel food proved better than feared and the surreptitiously carried bicarbonate of soda, unnecessary. So many people came to hear Dr. Klopfer that the address had to be moved to a larger auditorium. Some of the introductory remarks I had planned for a modest sized group, feeling cozy after their culinary repast, could not be made to the large and somewhat air-conditioned crowd. Dr. Klopfer, however, adapted admirably and delivered a most stimulating paper on the Rorschachs of cancer patients. I'll confine my scoop to saying that it seems the less psychodynamic defensiveness, the more benign the cancer and vice-versa, (as if psychological defenses might decrease the somatic resistance). At the business meeting, a resolution had previously expressed special appreciation of Dr. Klopfer's services to the Society over the many years, and in many ways.

The business meeting of the incoming Board met in a properly smoke-filled hotel room, without any further resemblance to a political gathering. In fact, a good deal of work was done, viz:

1) It was voted to establish an ad hoc committee to study the problems of nominations and elections.

2) The Board voted to cooperate with the Committee on Primary Records of the National Research Council in making the necessary steps for obtaining funds, first to explore what data might be useful to micro-film and then to proceed forthwith. Raw data of Ph.D., thesis were considered possibly particularly useful. Bertram Kaplan and Theodora Abel were appointed co-chairmen of a committee on micro-filming of projective data, to work out the details of selection, manufacture and distribution. I am particularly happy about this program, which ties in with another pet

plan of mine, which was also voted into existence, namely,

3) A Research Registry (as part of the Research Committee) whose function will be:

a) To advise on Ph.D. thesis, when requested to do so

b) To integrate related material and

c) To stimulate research in needed areas of projective techniques.

It was suggested that the committee begin its work by eliciting reactions from faculty members in various institutions, to the idea of their being able to draw upon the Registry for suggestions, and for information on both available and also badly needed data in projective methods. The idea is to suggest some common frame of reference for collection of material, to have basically comparable data in the long run. It was also suggested that the Registry solicit funds to carry on its work.

Hand in hand with the strengthening of the research aspects of projective techniques must go the better training in them, already mentioned. As a small Society, the Society for Projective Techniques can appropriately function as the guardian of the optimal use of projective methods in the ever-enlarging and often uncharted field of psychology. For instance, it is essential that the optimal time in the training of a clinical psychologist be determined for teaching projective techniques. As already stated, it is also essential that only experienced clinicians, well-trained in projective techniques, teach these methods.

Ruth Monroe and Michael Finn were appointed co-chairmen of this Committee with these ideas in mind. It was specifically voted that they suggest to the Education and Training Board of the American Psychological Association the advisability of considering fellowship status in the Society of Projective Techniques a requirement for teaching projective techniques in approved clinical pro-

grams. In this way, the Society could properly safeguard the interest of all psychology in ascertaining the best possible training in this vital clinical area.

It is obvious that the Society will be happy to consider Fellowship status for all those who teach projective techniques and speedily open its ranks to all who are qualified.

It may seem regrettable to erect further barriers and rules and guilds and forms of approval. Personally, I even dislike the regimentation of red and green traffic lights. Likes and dis-

likes, however, have nothing to do with necessities (in a technologically increasingly complex society with increasing interaction) to safeguard us all against individual irresponsibility.

With this take-off from Freud's thoughts on *Civilization and Its Discontents*, I will close my report. Maybe interstellar space will open up new frontiers for more happily irresponsible living—such as testing Martians with psychodiagnostic devices dreamt up in glossy magazines.

LEOPOLD BELLAK, M.D.

ANNOUNCEMENTS

RESEARCH EXCHANGE

EDITH WEISSKOPF-JOELSON

As you remember this column was started for the purpose of (1) publishing research ideas and (2) exchanging rare projective records.

Here is a contribution to the former purpose: Would a pictureless TAT be diagnostically useful? In other words, if subjects would be asked to tell stories without any objective stimulus, how would these stories compare in diagnostic value to traditional TAT stories? In investigating a problem of this type what would be the best way of comparing the two sets of stories as to diagnostic value? Would we hypothesize that they yield not only a different amount but also a different kind of diagnostic material? What theoretical implications would such research have regarding the problem of stimulus ambiguity? Would the relative efficacy of the pictureless TAT vary as a function of the subjects' personalities? If so, what kind of hypotheses could be formulated regarding such variations? How would an investigation of this problem be related to previous research?

A reader of this column might be interested enough in this question to do some empirical research on it. Or some readers might want to elaborate further on the problem in the next issue of the JPT. Others might like to express their own ideas in the Research Exchange. Thus, this column might become a place where the speculator and the active researcher meet, for the benefit of psychology, we hope.

Mr. Richard Benjamin, Director, Cold Spring Institute, Cold Spring-on-Hudson, New York, has sent us the following contribution:

We have projective records on thirty women, ranging in age from 55 to 80 years with a mean of 65 years, and in IQs from 119 to 145, with a mean of 130. The batteries administered to these subjects consist of a Rorschach, a Sentence Completion Test (Miale-Holsopple), a Mosaic Test, a Wechsler-Bellevue Scale, a Bender Gestalt Test, and, with some subjects, a TAT. The records are available to anyone who wishes to use them for research purposes.

BOOK REVIEWS

The Editors have had some difficulty finding reviewers for a variety of books which seem relevant for review in this journal. Be-

cause of the uncertainty and slowness of answers from persons who have been invited to write reviews, the Executive Editor has decided to announce the titles of books that require reviewers and allow our readers to volunteer.

We request that you do not volunteer to review a book unless you (1) will do it within three months of receipt of the book (2) will be moderately objective in your appraisal (3) are fairly sophisticated in the area dealt with and (4) know the language pretty well. Reviewers may retain the book. Here is what we have at present.

Brower and Abt: *Progress in clinical psychology* (Vol. 2).

Buhler and Manson: *The Picture World Test*.

Burton and Harris: *Clinical studies of personality*.

Klopfer et al: *Developments in the Rorschach technique* (Vol. 2).

Kragh: *Actual-genetic model of perception-personality*.

Kutash and Gehl: *Graphomotor Projection Technique*.

Libo: *The Picture Impressions Test*.

Meili-Dworetzki: *Das Bild des Menschen in der Vorstellung und Darstellung des Kleinkindes*.

Minkowska: *Le Rorschach*.

Phillipson: *The Object Relations Technique*.

Piotrowski: *Perceptanalysis*.

Stern, Stein, and Bloom: *Methods in personality assessment*.

Stumper: *Triebstruktur und Geisteskrankheiten*.

Tomkins and Miner: *The Tomkins-Horn Picture Arrangement Test*.

van den Broek: *Behn-Rorschach Test*.

Please address requests to Bertram R. Forer, 2170 Live Oak Drive, E., Los Angeles 28, Calif.

ANNOUNCEMENT

The editors of the *Journal of Projective Techniques* regret the omission of the sample cartoon from the paper by Shapiro, Biber, and Minuchin: *The Cartoon Situations Test: a semi-structured technique for assessing aspects of personality pertinent to the teaching process*, *Journal of Projective Techniques*, 1957, 21, 172-184. The cartoon has been printed and copies can be obtained from Dr. Edna Shapiro, Bank Street College of Education, 69 Bank St., New York 14, N. Y.

NEW MEMBERS

The Society for Projective Techniques is happy to welcome the following newly elected members:

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